STATE OF MARYLAND

The Honorable Robert L. Ehrlich, Jr., Governor
The Honorable Michael S. Steele, Lt. Governor

DEPARTMENT OF NATURAL RESOURCES

C. Ronald Franks, Secretary

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Richard Barton, Superintendent, State Forest and Park Service

Approval of the **Land Unit Plan** for **Wye Island Natural Resources Management Area** has been granted on this 19th day of July, 2004.

C. Ronald Franks, Secretary
Maryland Department of Natural Resources

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July 2004

Wye Island Natural Resources Management Area Land Unit Plan

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INTRODUCTION

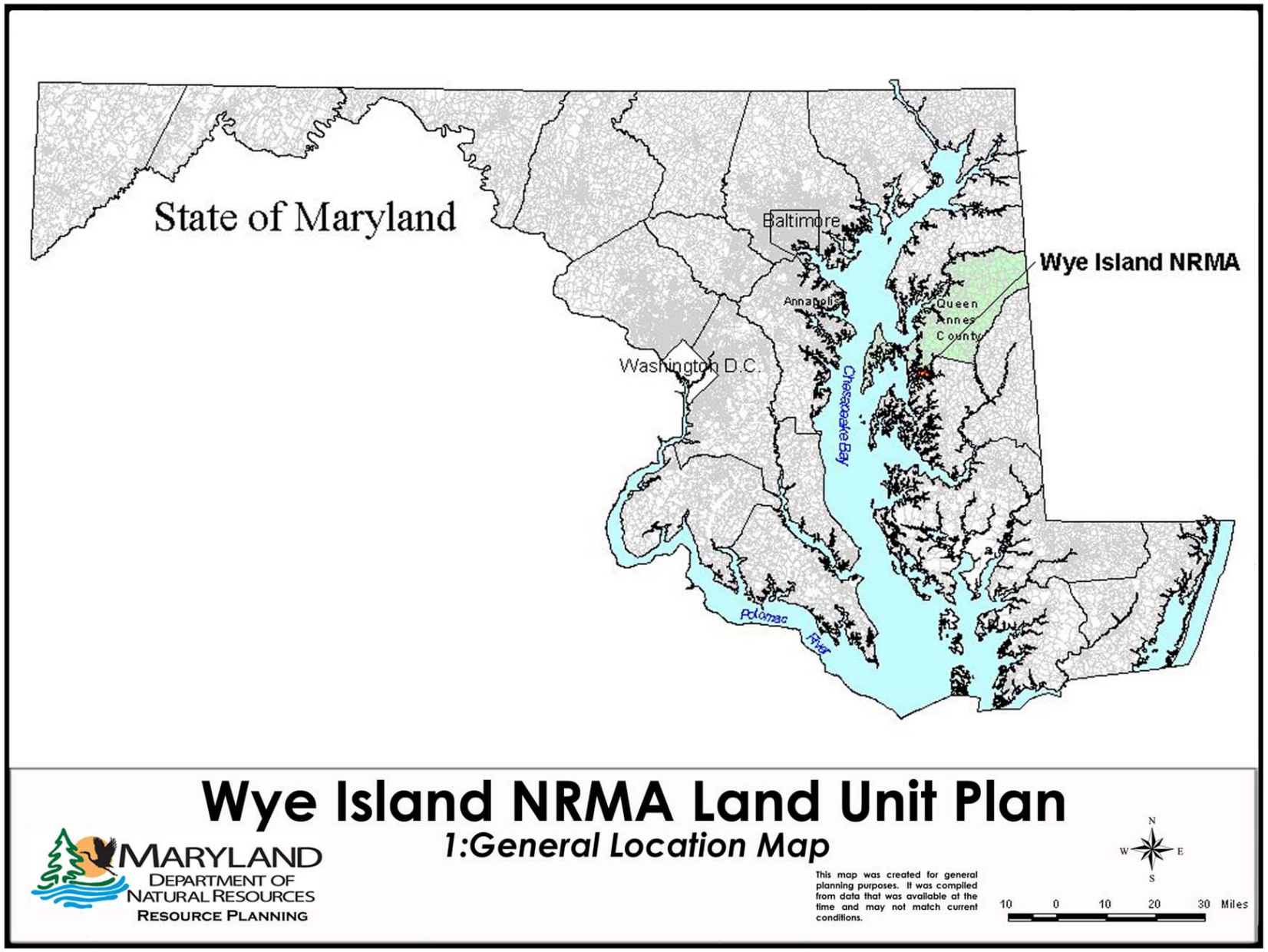
SITE DESCRIPTION

Wye Island Natural Resource Management Area (NRMA), a 2,514-acre parcel of land, is part of a 2,800-acre island located outside of Queenstown in Queen Anne's County, Maryland (Map 1). The island is completely encircled by the Wye and Wye East Rivers with the Wye East River serving as the Talbot County line directly south of the island. The first portion of the NRMA was acquired by the state in 1976 to preserve it from development. Today, the NRMA serves many purposes by providing numerous recreational and educational activities for the outdoor enthusiast, while also helping to conserve and enhance various natural resources. The island is economically self sufficient with the 1,300 acres that are presently used for agriculture, generating approximately $130,000 per year in revenues for the state during the last three years. Also, an additional $18,000 per year is produced from recreation such as hunting licenses, lodge rentals, and camping fees.

The NRMA consists mostly of undeveloped farmland. Fingers of forestland extend into these fields providing biological diversity as well as natural corridors that act as cover for animal movement. This diverse broken terrestrial habitat is home to many edge-loving species such as white-tailed deer, raccoons, opossum, and gray squirrels in addition to many songbirds. Water resources include several soil management ponds that are scattered around the property as well as over 30 miles of shoreline with numerous creeks and coves. As a result, its fishery is composed of many of the popular game fish native to the area including striped bass, yellow perch, white perch, and bluegill. In addition to commonly seen species, the island also supports two notably rare species, the Bald Eagle and the Delmarva Fox Squirrel.

The NRMA provides an ideal setting for many recreational uses of the natural areas and surrounding waterways. Hunting, hiking, bicycling, bird watching, and horseback riding are a few of the activities enjoyed on the land. In addition, the winding creeks and coves provide ample opportunity to engage in fishing, boating, swimming, and crabbing.

Before Wye Island became public property, it had a variety of owners with historical significance. One of the first owners, William Paca, who was a former governor of Maryland as well as a signatory of the Declaration of Independence, owned the northern half of the island. John Beale Bordley, a highly regarded lawyer and judge, owned the southern half and managed to make his side of the island entirely self-sufficient. Later the island was divided and sold as 13 separate farms. After the division, one of the more noteworthy owners was the Stewarts. Together, Glenn and Jacqueline Stewart converted much of the island into a famous Hereford cattle farm and were also responsible for the construction of the hunting lodge located on Granary Creek. Eventually, the Stewarts sold their farm to the Hardy's. Soon thereafter the Hardy's attempted to sell the property to the Rouse Corporation in order to convert it into a cluster community with a centrally located golf course. Public opposition caused this effort to be abandoned. The Hardy's later attempted to divide and sell the land through an auction splitting it into parcels of 10 to 20 acres. However, prices were much lower than they had hoped for and they withdrew their property from the market. In 1975, new pressures mounted to develop the island, but this time the State of Maryland purchased the property that now composes the NRMA.


State of Maryland
Baltimore
Annapolis
Queen Annes County
Wye Island NRMA
Washington D.C.
Chesapeake Bay
Potomac River
Wye Island NRMA Land Unit Plan
1:General Location Map
MARYLAND
DEPARTMENT OF
NATURAL RESOURCES
RESOURCE PLANNING
This map was created for general planning purposes. It was compiled from data that was available at the time and may not match current conditions.
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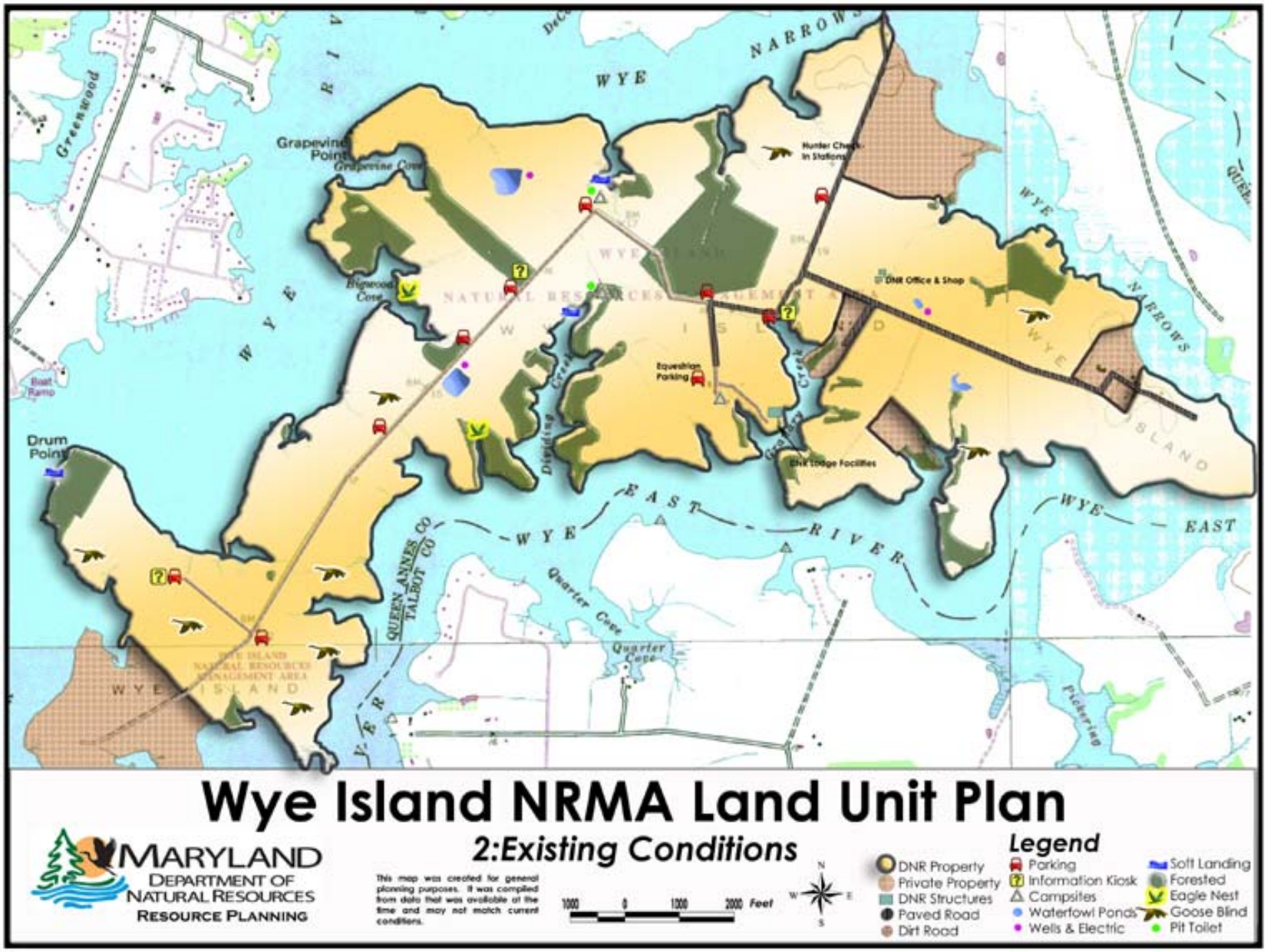
Today, the Wye Island NRMA is managed by the State Forest and Park Service, which is a Unit of the Maryland Department of Natural Resources. Management goals aim to conserve and improve natural wildlife and fishery habitat as well as to promote compatible recreational uses. The NRMA can be easily accessed by human-powered vessels at one of the three soft landing sites located at Drum Point (Ferry Point Landing), Solo Cove, and Dividing Creek, or by car via the bridge on Carmichael Road. There are nine small parking lots, of approximately eight-car capacity each, scattered around the island alongside Wye Island and Ferry Landing Road. In addition, for equestrian users there is another parking area located on DNR Lodge Lane with space for about twenty cars. Refer to Map 2 for illustrated general conditions, locations of facilities and land divisions.

This Plan attempts to outline the present conditions and uses of Wye Island NRMA and to identify the pressing issues and goals set for this piece of land. Recommendations are made at the end of this plan to achieve these goals and clarify the methods through which the state hopes to accomplish them.


Wye Island NRMA Land Unit Plan
2:Existing Conditions
MARYLAND
DEPARTMENT OF
NATURAL RESOURCES
RESOURCE PLANNING
This map was created for general planning purposes. It was compiled from data that was available at the time and may not match current conditions.
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Legend
DNR Property
Private Property
DNR Structures
Paved Road
Dirt Road
Parking
Information Kiosk
Campsites
Waterfowl Ponds
Wells & Electric
Soft Landing
Forested
Eagle Nest
Goose Blind
Pit Toilet
WYE RIVER
WYE EAST RIVER
NARROWS
Grapevine Point
Bigwood Cove
Boat Ramp
Drum Point
Dividing Creek
Equestrian Parking
DNR Office & Shop
DNR Lodge Facilities
Quarter Cove
QUEEN ANNES CO
TALBOT CO
WYE ISLAND
Greenwood

THE PLANNING PROCESS

The Purpose and Structure of the Land Unit Plan

This Land Unit Plan was developed to guide the resource management and public use on the Wye Island NRMA for the next 10 to15 years. While this Plan does not contain a solution to every issue that may arise within the NRMA, it does predict some of the changes that will affect this piece of land. Therefore, this land unit plan should be used as a framework from which to approach the goals for management of Wye Island. Any proposals or issues that may come up in the near future will be handled as a project review proposal that will be scrutinized for compatibility with the goals and strategies identified in this Plan. This Plan is divided into four major sections. The first describes the available resources at the NRMA including both living and abiotic. The second section addresses the current uses of the NRMA by all of the island's visitors. Section three discusses the different issues and concerns that currently face the NRMA as well as ones that will be considered in the future. Finally, the fourth section establishes management goals for the NRMA and strategies for how best to accomplish them.

Plan Development

The development of this Land Unit Plan was the result of a culmination of efforts from people both within the DNR and outside. When Wye Island was first acquired by the state, an interim land unit plan was put into effect stating what practices were to be permitted and what resources were to be specifically protected and/or managed. This Plan was to be used until a more detailed plan could be provided. The more detailed plan was started in earnest in 1998. Information for inclusion into the plan was gathered and organized by an interdisciplinary (ID) team. The team held regular meetings to discuss the resources of Wye Island NRMA and their management. Scientific data regarding Wye Island's natural resources were gathered from a multitude of professionals, including but not limited to: wildlife, natural heritage and fisheries biologists; foresters; a land manager; a geologist; an engineer; an archaeological historian; and three soil scientists. Based on this data and existing concerns for the property, management guidelines were developed for the NRMA. Using the information collected a Plan was drafted and revised by many of the same resource professionals. In order to solicit citizen input this plan was presented to the public at a meeting held on October 20, 2003 at Chesapeake College in Wye Mills. Information related to the public meeting was also posted in local newspapers and on DNR's website. The plan then underwent a 30-day public review period starting on October 20, 2003 and ending on November 20, 2003. An official copy of the final revised plan, with a document of all public comments, was approved by the Secretary of the DNR on _____, 200_.

EXISTING CONDITIONS

PHYSICAL ENVIRONMENT

Geology

Knowledge of the geology of Wye Island can help us to understand not only the soil composition and plant diversity, but also the climate and wildlife species native to the area. Deposition of the sediments comprising Wye Island occurred during the Late Pleistocene Period, or roughly 120,000 to 24,000 years ago. Throughout most of that time, sea level was getting progressively lower because of the growth of massive ice sheets during the last ice age. The sediments were generally deposited in a shallow marine to estuarine environment. Sea level began rising again about 17,000 years ago, reaching its present level about 8,000-10,000 years ago. Therefore, the island as it is known today has been in existence for roughly 8,000-10,000 years.

Driller's logs and an exposed section on the west side of Wye Island formed the basis upon which the majority of geologic data was compiled for the area. Well drilling logs from several sites both north and south of the island were used, as no records could be found containing geologic data from within the island itself. The only on-site geologic study was conducted on a small cliff face on the west side of the island that is now mostly eroded.

The top geological layer of Wye Island NRMA is composed mostly of beach sand and marsh deposits formed from the wave action against the shores of the island and the decaying organic matter created in the resident marshes. Earlier geologic records show that during the Pleistocene Epoch, large amounts of Kent Island Formation were deposited. These are among the youngest formations that make up most of the lowlands on Maryland's Eastern Shore and as such contribute the most to the geology of the region. These deposits are considered partly marine and partly estuarine in nature with shell fragments having been found at depths from 10-45 ft. At the bottom of the Kent Island Formation is a yellowish-brown sandy clay that has an underlying border of small pebbles. Found below the pebble layer is the Calvert Formation, left during the Miocene Epoch. It is comprised chiefly of cemented blue-black sandy beds containing abundant fossil casts. Although it contains marine shells and diatom tests, these deposits were probably left during a period of shallower water than was present during the preceding Eocene Epoch.

Climate

Queen Anne's County's climate is generally influenced by wind currents originating from the south and west. During the winters, which are usually mild, alternating high and low pressure systems come from the northwest bringing with them surges of cold, dry air and then warm, humid air. In the summer, the weather is dependent mostly on the warm, humid air that is brought up from the south/southwest that persists for much of the time. Spring and fall usually mark transitional stages between these two weather patterns. With its proximity to the Chesapeake Bay and the Appalachian Mountains, Queen Anne's County has a very temperate climate usually not experiencing major extremes in temperature. The bay breezes warm the overlying air mass in the winter and cool it in the summer. Average wind speeds approach 10 miles per hour. Mean annual precipitation for the area hovers around 45 inches with March being the wettest month of the year. Rainfall is generally well distributed throughout the year

and as a result the growing season lasts approximately 200 days. Snowfall is usually minimal in the county due to its close proximity to water. Humidity for the region averages around 70 per cent. The relatively flat topography of the region does not contribute to shading or rain shadowing so the climate of Queen Anne's County and subsequently Wye Island is primarily determined by it's location to the Chesapeake Bay and the direction of local weather patterns.

Topography

Wye Island's topography is very flat, especially around the central part of the island where it is less than a 1% grade. The highest point is located on the east side of the island and rises to only 32 feet above sea level. The steepest slopes of the island are found along the rivers and coves that make up the irregularly indented shoreline. It is here, in some spots, that the grade can be as much as 15%. These waterways create numerous small peninsulas around the island whose perimeters consists of steep slopes, narrow beaches and marshes in some areas. There are only a few ponds or depressions located on the central part of the island acting as waterfowl and wet-soil management areas. Water depth along the shoreline of the island is deepest to the north and southwest, reaching depths of up to 20 feet.

Soils

The soil composition of Wye Island is very important due to the varied uses of the property. Soil types, in effect, determine not only the native vegetation and animal life but also how the state manages the property. Soils that are highly sensitive will be off limits to recreational development. Likewise, soils that are well suited for agricultural productivity are delineated as such provided that they are not within the riparian buffer areas. Queen Anne's County Soil Survey results gathered by the Natural Resources Conservation Service in 2003 showed that Wye Island's soils are comprised of two main associations, Whitemarsh-Hurlock-Carmichael on the interior and western end of the island and Matapeake-Mattapex-Nassawango around the margins of the island. Another soil type that is less represented but still present on the island is the Ingleside-Pineyneck-Unicorn association.

The predominant form of soil on Wye Island is the Matapeake-Mattapex-Nassawango association which are primarily well-drained and moderately well drained silty loam soils found somewhat inland but primarily near the shoreline. This silt loam is moderately slowly permeable, and as such is poorly suited for septic systems and building development. They are, however, very productive for several different agricultural uses if guarded against the forces of erosion. This soil association is believed to be quite suitable for the cultivation of such crops as corn and soybeans.

The Whitemarsh-Hurlock-Carmichael association that comprises much of the interior of the island can be described as having silty or plastic silty clay loam soil textures. Whitemarsh soil makes up the largest percentage of this association found on Wye Island and is poorly drained. As a result this soil has the largest amount of limitations regarding development, agriculture, and vegetative establishment. This soil association has, however, been found to be the most suitable for shallow water ponds or wetland development.

Lastly, the Ingleside-Pineyneck-Unicorn soils are limited mostly to the north and eastern peninsulas of the island and are generally described as having friable loam subsoil. They are characteristically well drained and moderately well drained soils that are highly suitable to varied agricultural uses as well as for mixed hardwood forest establishment. This soil association, in addition, has slight to moderate limitations for development. The main constraints for its use are the facts that the Ingleside, Pineyneck, and Unicorn soils have a seasonally high water table and occasional wetness.

Thus the majority of the DNR holdings on Wye Island can be characterized as having well drained to moderately well drained soils that are highly suitable for productive farming. All of these factors have been taken into consideration in planning for the NRMA so as maximize the productivity of the land as well as to protect its biological diversity and structural integrity.

Wye River

The Wye is a brackish tidal river that extends northward up from Eastern Bay, a body of water located directly south of Kent Island. The Wye actually splits at the southwestern most end of Wye Island and has a branch to the east known as the Wye East River. Farther north the Wye splits a second time bordering the island to the north by what is known as the Wye Narrows. The Wye system has a small amount of freshwater inflow, but for the most part its water characteristics are controlled largely by the salinity, temperature, and flow of the Chesapeake Bay. The Wye River has historically been a very productive river for Maryland's fisheries. Historically, clam beds produced abundant yields for commercial shell fishermen. Crabs, striped bass, perch, pumpkinseed, and catfish have also abounded in this body of water along with the many species of birds that depend on this tributary for food and habitat. The Wye also supports a wide range of water recreation such as boating, kayaking, and fishing. While the Wye River does not have an extremely wide watershed area, it still has a profound impact on the health of the Chesapeake Bay. For this reason as well as others, the planners for Wye Island NRMA consider the health of the Wye River in relation to its nutrient loadings and toxic material levels very important.

Waterfowl Moist Soil Management Pond

WETLANDS

The NRMA has many different wetland areas. There are four permanent freshwater wetlands within the NRMA with a few seasonally occurring ones developing in crop fields when the area receives particularly wet weather. The island also contains several salt marsh or brackish water wetland areas. These, in contrast to freshwater wetlands, are predominantly naturally occurring. The largest of these salt marshes is located along the Wye Narrows, a mile west of the Wye East River and is approximately 7.6 acres in size. All in all, there are about 20 acres of salt marshes on the north shore that are periodically inundated with tidal fluctuations. These marshes serve as habitat for

many species of birds including herons, egrets, and numerous species of ducks. The predominant species of grasses found here are salt marsh cord grass, salt meadow cord grass, water bush, marshelder, and phragmites, an invasive species. Other types of wetlands present on the island are those that are found around most of the coves and inlets. These technically could be classified as small deltas near the mouths of tributary streams and they account for approximately 15 total acres of the island. In addition, several man-made freshwater wetlands are scattered around the property. One of the most conspicuous ones was constructed adjacent to the park office for soil management purposes. There are also approved plans for a future wetland area to be constructed just west of Solo Cove surrounding a sediment pond to be used specifically as habitat in a goose management area. These freshwater wetlands are also vitally important in providing habitat for nesting and migrating waterfowl.

SHORELINE

The shoreline of Wye Island, as stated earlier, is highly varied and is composed of a myriad of creeks and coves. The shoreline has an abundance of wildlife and presents a number of recreational activities for NRMA visitors. It is along this shoreline where the steepest grade of the land is found on the island. Banks can range anywhere from 1 to 20 feet high in some locations with small bluffs that have been formed due to erosion. In other areas, salt marshes form a gradual gradient between the surrounding rivers and dry land. Currently, just less than 2 feet of erosion is occurring to the shoreline every year based on the comparison of two shoreline surveys, one being done in 1847 and the other in 1947. This is not a high erosion rate when compared to less protected shorelines along the Chesapeake Bay. The majority of this erosion is occurring on the southern shoreline due to its increased fetch and the prevalence of mostly southern and western winds. Repeated reports of falling trees pulling up large amounts of soil have led to the suggestion of providing the banks with non-structural shoreline stabilization.

View of Shoreline

Since 1985 the Shoreline Erosion Control Division of the DNR has stabilized approximately 3.52 miles of shoreline mostly through non-structural vegetative means. Another 12 miles of southern shoreline have been stabilized since 1993 through the efforts of various volunteer groups in cooperation with the land manager.

One of the methods of stabilizing the banks involves cutting trees located along the shoreline. By leaving the root systems in place and leaving the canopy part of the tree on the shoreline, the sediment becomes trapped, preventing further erosion and encouraging accretion. Another shoreline stabilization measure that has been adopted involves planting a 25 foot buffer strip of native emergent grasses such as smooth cordgrass and salt meadow hay. A third method of non-structural shoreline stabilization that has also been utilized on the island is to trim shoreline trees

from the base to approximately 30 feet up. This allows sunlight to penetrate which ultimately causes shore grasses to grow. In many cases a combination of these methods have been used at the NRMA to promote sediment retention. These methods have all been used to a varying extent along the southern shoreline. In some more erosion prone areas such as Granary Creek, riprap, stone jetties, and even bulkheads have been constructed to absorb the stronger wave energy from the southwestern winds.

Other high erosion areas of the NRMA remain to be stabilized. High on the priority list of areas to be stabilized is the southwestern exposure of Drum Point. Another severely eroded area is the western exposure of the peninsula immediately north of the mouth of Pickering Creek. These are further addressed in the *Issues and Concerns* section. Without action taken to stabilize the susceptible shoreline of the NRMA, Wye Island will continue to erode and over time valuable resources may be lost.

FORESTS

Maintaining healthy blocks of forest on the island is considered a top priority in order to provide a diversity of wildlife habitat for such things as forest interior dwelling birds and the endangered Delmarva Fox Squirrel. In addition, protecting this valuable resource helps to control nutrient loadings as well as to minimize erosion. These forests also provide scenic vistas throughout the NRMA for hikers and other nature watchers. Although most of the island's acreage is tied up in agriculture uses, a significant portion of the NRMA is still wooded. In 1984 a Forest Resource Management Plan was drawn up identifying 3 separate tracts of forest comprising 130 acres in total. The largest tract is one of about 85 acres located in the center of the island. Another tract that was surveyed was on the Wye Narrows just east of the park office. The final noteworthy forested parcel of land that was identified on the island is that composing Schoolhouse Woods. This is a 21-acre old growth woodlot comprised of trees that some believe to be as much as 300 years old. Other smaller forested lands occur in and around the many coves and creeks. In addition, almost every year new trees are planted to control erosion and widen riparian forest buffer areas.

Old Growth Tree in Schoolhouse Woods

Stand Composition

The woodlots on the island have numerous successional differences and as such, quite a diversity of species. The 85-acre woodlot in the center of the island is made up mostly of American beech and sweet gum trees. However, further away from the shore, and closer to Wye Island road there is a 14-acre stand of mostly white oak trees. Some loblolly pines are also mixed in this area but are even more prevalent in a 5-acre parcel contained within the main block of forest. Tulip (yellow) poplar was also found in this tract although predominantly in the stand that is immediately adjacent to the shoreline.

In general, yellow poplar was found commonly in any strip of woods that abutted the shoreline, as was the case in the isolated 24-acre tract located along the Wye

Narrows. This particular stand had been cut over 30 to 40 years ago and now contains a sizable amount of white oak as well. Also found along the shorelines but in less abundance were mocker nut, pignut, and sometimes shagbark hickory species.

Schoolhouse woods, the 21-acre strip that once served as a property boundary, had a slightly different stand composition than the rest of the tracts. This specific patch did not appear to have been cutover in the past and as a result is made up of many older trees, some of which are believed to be at least 300 years old. This forest primarily contains sweet gum and southern red oak trees with relatively little under story.

The under story of the majority of forests on Wye Island is fairly sparse with sweet gum, holly, and sassafras saplings growing in many small clearings. Non-native ornamental species are also represented on the island by Norway maple, privet, and magnolia which were all planted on the few acres surrounding Wye Hall. These have not spread and do not appear to be a threat to native species. However, Canadian thistle and Johnson grass, noxious weeds, have proved to be fairly invasive and have been removed where possible. This is in keeping with State law that requires control of noxious weeds and this is done via the Noxious Weeds Program.

Forest Conservation

The forested and grasslands of Wye Island are being protected in several ways. First of all, no new clearing of forests is allowed on the property besides what is done for shoreline stabilization. In addition, Critical Area laws do not permit the cutting of vegetation within the designated minimum 100-foot buffers established around the shoreline of the entire island. Also, enrolled under the auspices of the Conservation Reserve Enhancement Program (CREP), 126 acres on the NRMA have been preserved in native vegetation for time periods ranging from 10 to 15 years. Within this program there are two distinct codes used in classifying the type of plantings that have been done on Wye Island NRMA. These codes are CP-21, which stands for a mixture of warm season grasses, and CP-22, which corresponds to plantings of mixed tree species and cold season grasses. Approximately 100 acres out of the total 126 has been planted in CP-22 with the other 26 having been planted in CP-21, further conserving the forest and grassland resources on the island. Other new plantings by numerous volunteer groups have also augmented the already existing forests. Wye Island participates in the Tree-mendous Program and uses the “Grow not Mow” philosophy to reduce labor intensity.

Present goals for forest improvement include expanding the Schoolhouse woods forest stand as well as widening other green corridors. Enlarging this important old growth forest would help to provide more forest interior habitat for forest interior dwelling species (FIDS) and would protect this rare type of forest from invasion by exotics.

The goal for all areas planted in trees is to obtain an indigenous climax forest. Care is to be taken here so that the proper pioneer species are planted first in order to initiate a historically correct successional sequence that provides plenty of organic detritus on the forest floor for other organisms to utilize. The loblolly pine and Virginia pine were at first thought to be the best pioneer species for jumpstarting the sequence of a forest from the early stages of succession to the final climax forest. Recently, however, forestry biologists have recommended planting a

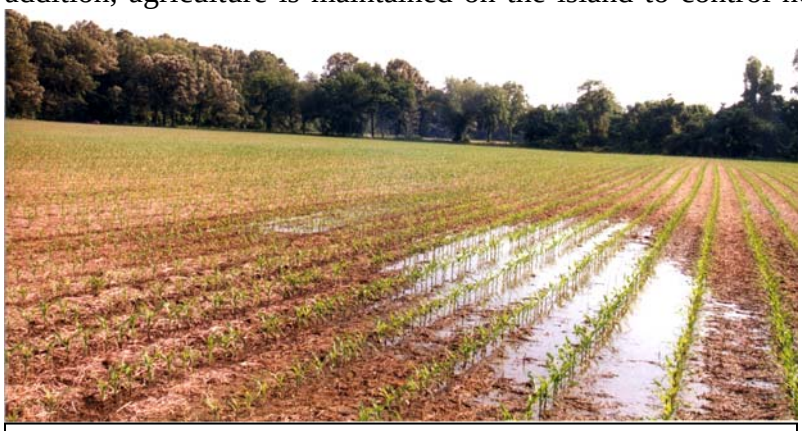
diversity of tree species to reduce the possibility of total forest planting failure due to disease or predation.

Results of Planting

Forest and grassland plantings have been very successful for the most part. The only problems reported were that during some extreme weather-related events, certain stands of plants were unable to survive but subsequent plantings seemed fruitful. Some exotic invasions have also occurred, most notably in grasslands by Canadian thistle, multiflora rose, and Johnson grass, but have been limited at worst.

AGRICULTURE

Farming has been apart of the island's history for over 300 hundred years. The soil on the island is noted for its fertility and draining characteristics that make it well suited for crop cultivation. The main crops grown on the NRMA are wheat, corn, and soybeans. Currently, approximately 1,300 acres (half of the NRMA) are leased for agriculture. The revenues generated from these lease agreements are used to base the following year's budget appropriations for the NRMA. In addition, agriculture is maintained on the island to control noxious weeds and to provide year-round forage for wildlife.



Agricultural Field on Wye Island

The farmable acreage is divided into 3 main parcels that are competitively bid on every 5 years. The highest bidder(s) then signs a lease agreement that requires them to abide by several different types of Best Management Practices (BMP's). As stipulated within the lease agreement, the farmer must agree to maintain at least a 100 ft buffer around the shoreline and to keep other minor grassy waterways fallow. In addition, the tenant must comply with a Nutrient Management Plan prepared by the US Soil Conservation Service. The plan also requires that corn stubble is left unplowed and strongly encourages the planting of winter grain cover crops to minimize erosion. Lastly, the tenant for the farmland must plant, without tilling, one rotation of Round-up Ready Soybeans or Corn in each field to control noxious weed growth.

Currently, two of the three parcels are leased for approximately $100 per acre. The third is leased on a custom basis in that the NRMA receives 40 percent of the net gain of the land after expenses. This has caused some problems since the 2002 due to the statewide drought. Agricultural revenue decreased by almost $18,000 and now proposals are being made to lease all three parcels on a per acre basis. Henceforth, leasing of land will be via a competitive bidding process.

A fourth parcel that comprises another 8.7 acres is leased by the DNR to the tenants of Wye Hall to provide a buffer between their property and cropland. These strips are currently being kept in warm season grasses to provide habitat for upland-loving species. According to the latest information available while other types of vegetation or trees could potentially fill this buffer zone, warm season grasses are preferable and anything else would have to go under review before implementation. Finally, one other parcel consisting of two fields of 86 acres in total, located on the right hand side just after the bridge is leased for 5 years to the University of Maryland for their agricultural resource program. This last parcel is leased for $25 per acre and the findings of research projects done by the university are reported to the Maryland Department of Natural Resources.

A few other conservation practices are followed on the agricultural land of the NRMA. Every year a total of 40 acres of corn must be left un-harvested to provide forage for wintering waterfowl. In addition, several moist soil management ponds were created around the property in low areas to not only aid sediment control but to provide wetland waterfowl habitat as well. Also, much of the 126-acres of land that is tied up in CREP contracts was formally cultivated land that now is used to help prevent erosion and to provide food and habitat for native wildlife. Periodical mowing and herbicide spraying is undertaken to maintain these areas. Herbicide use is limited to times where there is no feasible alternative. When necessary, agents and application procedures with the greatest target specificity and least non-target impact is used. The goal here is to get rid of noxious weeds, which is a requirement of the CREP program.

WILDLIFE

Whitetail deer

Wye Island's various habitats serve as home to a multitude of wildlife. White-tailed deer, raccoons, opossums, gray squirrels, mice, moles, and red fox utilize the small wooded and edge habitats on the island while geese, ducks, bobwhite quail, cottontail rabbits, and many songbirds can be found in the grassy and open field areas. The island also supports several documented rare species such as the Delmarva Fox Squirrel and the Bald Eagle. These species will be addressed in greater detail in the section titled "Species of Concern."

As of yet the most extensive list of the flora and fauna of Wye Island that has been compiled was done so by the United States Geological Survey/Biological Resource Discipline – Patuxent Wildlife Research Center. Many species of reptiles, amphibians, and invertebrates were observed during their wetland study such as leopard frogs and green frogs. Other observations, particularly those in the 1973 Progress Reports, recorded sitings of reptiles like copperheads, black racers, and various species of turtles.

In recent years, on the NRMA, increasing acreage has either been planted in warm season grasses or left fallow in order to help control erosion and slow nutrient runoff. This has provided much needed grassland habitat for a number of upland dwelling fauna such as bobwhite quail, mourning doves, and cottontail rabbits. These grasslands provide nesting cover and forage for a

range of other species as well. They are being maintained as such through the use of biennial mowing which prevents their succession into climax forests.

Other habitat improvement efforts include forest plantings that have been done on a yearly basis by numerous volunteer groups. Mixed tree species are planted in the hope of enhancing existing blocks of forest in order to create larger stands that can support viable populations of Forest Interior Dwelling Species (FIDS). Presently, the only ideally suited FIDS habitat on the island is the 85 acre forested block in the center of the island.

Waterfowl

The winding shoreline and numerous wet depressions that dot the Wye Island landscape provide ideal habitat for resident and migrating waterfowl, shorebirds, and wetland birds. In addition, the 1,300 acres of adjoining agricultural land serve as a historically important feeding area for the native bird populations. In the most recent annual mid-winter study (1999) it was found that approximately 20,000 waterfowl use Wye Island as wintering habitat. Every January, from 1988 through 1999 this comprehensive study also made note of the number of each individual species that frequent the island. It was reported that the most commonly seen waterfowl at this time were mallards, canvasbacks, ruddy ducks, and Canadian geese.

Providing habitat for waterfowl is of great importance to the NRMA goals. Funded by Maryland Waterfowl Stamps and Ducks Unlimited, a special Canada goose sanctuary with a small freshwater pond has been designated on the north end of the island to give geese a resting area free of human disturbances. The area is annually mowed to provide geese with fresh succulent growth and it currently is being surveyed in order to determine what specific plot would be the most productive to flood. Other moist soil management areas have been constructed in the past few years that also serve as brooding and resting areas for puddle ducks and geese. One is located adjacent to the park office and another lies alongside Wye Island Road across from the Osage Hedgerow hiking trail. In addition, since the year 2000, a total of 40-acres of corn has been left unharvested by the leasing tenant so as to provide a food plot for wintering waterfowl.

FISHERIES

Striped Bass

Wye Island's fisheries resources consist entirely of those within the tidal waters that border the island and NRMA. Many species use these waters during the year with some staying permanently while others migrate in concert with seasonal weather patterns and tidal fluctuations.

The physical habitat of the Wye and its branches is predominantly made up of a silt bottom. In certain areas along the shoreline, trees have fallen which provide structure for fish to hide

amongst and use as ambush points when feeding. The Wye River supports a diverse array of recreationally important fish species including striped bass, largemouth bass, black crappie, channel, white, and bullhead catfish, yellow perch, white perch, bluegill, and pumpkinseed. In addition, the American eel and the gizzard shad were also found to be quite prevalent in the Wye. In general, the health of the Wye's various fish species is fairly good. Studies done on yellow perch show that on average they reach the minimum harvestable size of 9 inches at approximately 4 years of age.

Other smaller baitfish species are also found in abundance around Wye Island including mummichog, striped killifish, menhaden, bay anchovy, hogchoker, and Atlantic silverside. Commercially, the Wye is especially known for its productive blue crab harvest. In fact, blue crabs in this area are noted for reaching considerable size because of the somewhat lower salinity system. Historically, the Wye River also supported commercially viable populations of oysters and soft shell clams although now water quality-related closings have severely limited the catch of these species.

SENSITIVE AREAS

Species of Concern

Several rare species of fauna reside on Wye Island within the state owned portion. The state and federally listed endangered species Delmarva fox squirrel (DFS) is known to occur in various areas on the property. In particular, Delmarva fox squirrels prefer contiguous mature stands of forest with little understory and abundant mast producing trees. Nest box and live trap surveys were conducted at Wye Island to gauge their abundance between the years 1991 and 1998.

FWS Photo

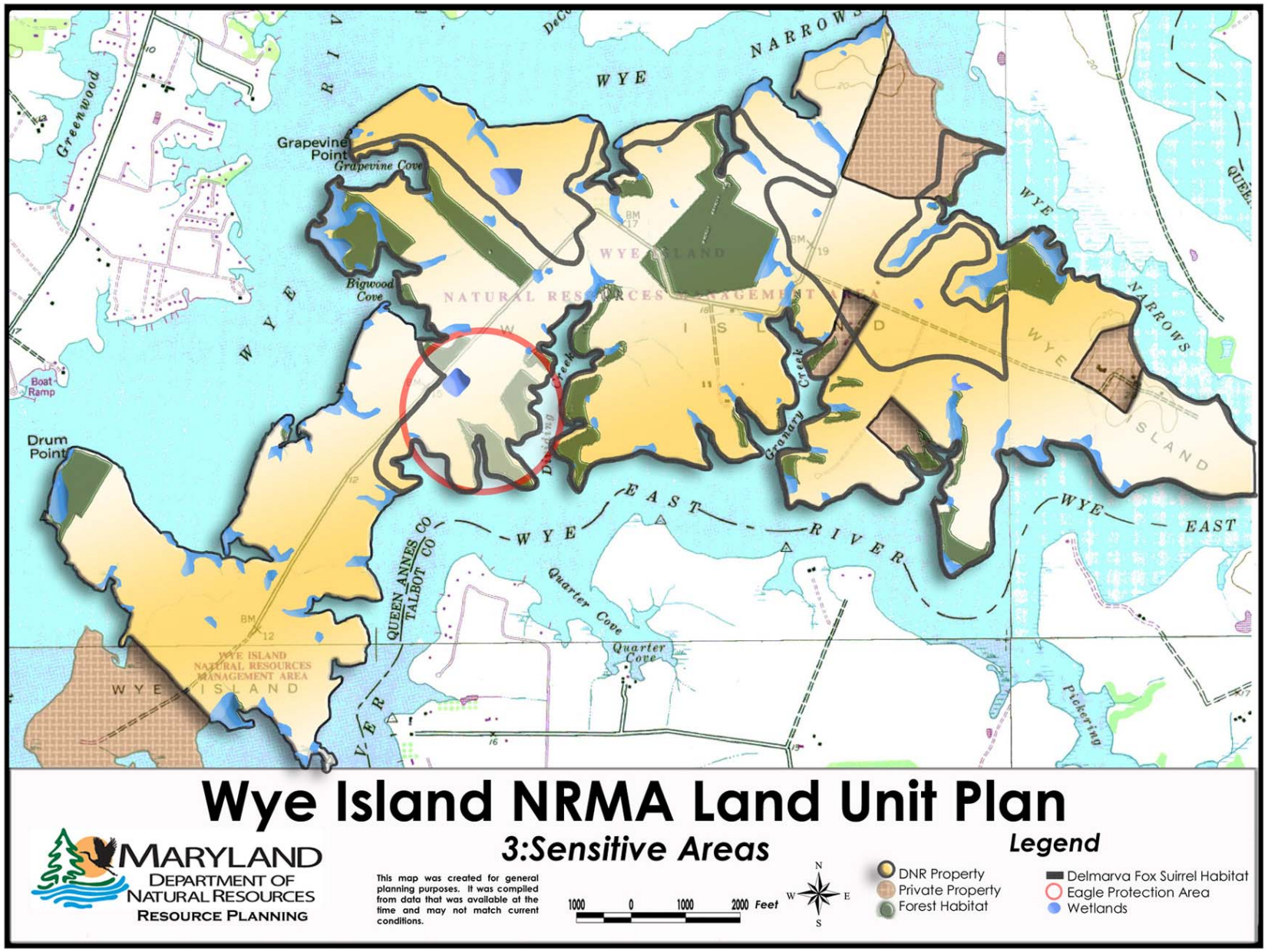
Delmarva Peninsula Fox Squirrel

Currently, areas within the island that have been found to hold Delmarva fox squirrels include Schoolhouse woods, the woods surrounding Dividing Creek, Tract 1 (85-acre forest in the center of the island), and a stand of forest located along the Wye Narrows just northeast of the park office (Ref. Map 3). Present protection measures are aimed at not disturbing the squirrels during their breeding season and not logging their habitat. Wye Island is seen as a crucial demonstration area for reviving their dwindling population levels.

The most recognizable state and federally threatened species that occur on Wye Island is the bald eagle. Since 1991, a site located on the edge of the woods behind the waterfowl habitat project near the western side of Dividing Creek has been home to a pair of nesting eagles (Ref. Map 3). This site has been monitored yearly for the presence of the eagles and the number of young produced by the pair. Only two years were recorded for which the site was not active with no indication that the mates had produced eggs. Current protection measures for the bald eagles include a ¼ mile protection radius around the nest and a restriction on field trial dates to avoid disturbances during the eagle's breeding season that runs from December 15 through June 15.

Great blue herons have also been observed using Wye Island as a nesting ground in the past. Nesting sites have been recorded on the point just north of Bigwood Cove and on the eastern point at the mouth of Dividing Creek. Recently, however, the pair moved their nest to the adjacent mainland just north of Wye Hall, across the Wye Narrows. As many as 27 pairs of blue herons were once observed in a single year at Wye Island with the peak occurring in 1993. The winding shoreline of the island provides ample hunting ground for this opportunistic colonial waterbird.

Wye Island also provides a home for various FIDS. The amount of FIDS habitat is rapidly decreasing across the state as more and more large blocks of forest are fragmented into smaller parcels consisting of mostly edge habitat. These birds mainly utilize the Tract 1 forest, as indicated on Map 3, in the center of the island due to its unique structural characteristics.


Wye Island NRMA Land Unit Plan
3:Sensitive Areas
MARYLAND
DEPARTMENT OF
NATURAL RESOURCES
RESOURCE PLANNING
This map was created for general planning purposes. It was compiled from data that was available at the time and may not match current conditions.
1000 0 1000 2000 Feet
N
W
E
S
Legend
DNR Property
Private Property
Forest Habitat
Delmarva Fox Suirrel Habitat
Eagle Protection Area
Wetlands
WYE
NARROWS
Grapevine Point
Grapevine Cove
Bigwood Cove
Boat Ramp
Drum Point
Greenwood
Dividing Creek
Granary Creek
WYE ISLAND
NATURAL RESOURCES MANAGEMENT AREA
WYE EAST RIVER
QUEEN ANNES CO
TALBOT CO
Quarter Cove
Pickering

Many ducks use the NRMA's agricultural fields and wetlands as stopover areas during their yearly migrations. Several species, in particular, have become the subject of increasing concern as their populations have decreased. Black ducks, a dabbler species, are known to breed on Wye Island and have had declining numbers for several years now. Scaup have also experienced a population decrease of almost 30 percent since 1955. While the overall North American population of canvasbacks has remained relatively stable, the local populations around the Chesapeake Bay are well below their historical levels. In addition, all of the waters surrounding Wye Island are considered important waterfowl concentration and staging areas. As a result, the NRMA is seen as vital habitat for maintaining healthy flocks of this one dabbler, these two diving ducks, and numerous other waterfowl species.

Additional protection guidelines for Delmarva fox squirrels, bald eagles, and FIDS are outlined in Appendix I.

Chesapeake Bay Critical Area

The vast majority of the land area on Wye Island is within the defined Chesapeake Bay Critical Area. Only a very small percentage of land on the interior of the island is not within 1000 foot of the mean high water line of either the Wye, Wye Narrows, or Wye East Rivers, all tidal tributaries to the Chesapeake Bay. In fact, in many places the NRMA is so narrow that the 1000 foot buffer covers the entire width of the island. With its small amount of development and agricultural setting, Wye Island is thus classified as a Resource Conservation Area (RCA) within the Critical Area laws. For this reason, residential and recreational development is highly restricted on Wye Island to protect the water quality and the local wildlife habitat. Presently, a 100 foot riparian buffer exists around the entire shoreline of the island. This has been deemed to be the most important area to protect and is thus checked yearly by the NRMA staff to prevent encroachment by farming practices. In addition, best management practices, as outlined in the lease agreements, must be used on the agricultural lands within the NRMA. These can be referenced in a sample copy of the special conditions addendum in the lease agreement in Appendix II. Existing trails within the 100 foot buffer are permitted under the law; however, new trails may not be constructed. Attaining the larger recommended 300 foot buffer seems unlikely for the island, as this would severely limit the land available for the agricultural land uses upon which the NRMA draws its revenue.

Wetlands and Erodible Soils

The wetlands at Wye Island are very important for wildlife habitat, nutrient removal, and they have served as historic wintering grounds for a multitude of waterfowl species. At the NRMA, tidal wetlands can be found along many of the indenting creeks. In addition, freshwater wetlands have been created in various locations along the spine of the island.

The southern shoreline is exposed to many forces of erosion due to the predominantly southwestern wind patterns. The steep slopes, especially along Granary Creek, cause this shoreline to be particularly fragile. Erosion rates for shoreline of the entire island are not overly high but could possibly become so if there is an increase in boat traffic. Extensive efforts have been directed towards the southern shoreline at stabilizing the most exposed banks. Currently, there are no public docks or boat ramps on the island. Only one pier for boat docking exists on the NRMA shoreline. However, its access is limited to NRMA employees and youth groups

such as those from Camp Wright. This was done to discourage overuse of the local waterways and to prevent sediment loss from excessive boat wakes. In addition, only 3 designated soft landing sites have been developed for use by canoers and kayakers. At these sites it is prohibited to launch even a human-powered vessel without a permit. Erosion occurring on the mainland of Wye Island has been minimal due to the use of cover crops and no till farming by the tenants. Seasonal closures of hiking trails to bikers and horses also help to alleviate erosion on particularly vulnerable wet paths.

Rare Habitat

Schoolhouse Woods, bordered on one end by Wye Island Road and at the other by Grapevine Cove, is one of the few existing old growth forests on Maryland's Eastern Shore. It currently has a hiking trail that runs the length of it and then returns to join the Holly Tree trail. Due to its environmental sensitivity, the trail is restricted to foot traffic only. This measure was taken to avoid erosion that may eventually cause the old trees to become uprooted and die.

HISTORICAL AND CULTURAL RESOURCES

Historical Structures

There are several historical dwellings or buildings on Wye Island that are located mostly on private land. The publicly-owned historical structures are all located west of Granary Creek and have been preserved for a couple of different reasons. Some of these structures include a corn crib/machinery head, windmill tower, and water tank that are all adjacent to the picnic pavilion. Built by the Stewarts, former land owners, they are believed to be almost 50 years old and are still maintained to preserve the agricultural look of the property. In addition, around the year 1930, the Stewarts built the hunting lodge, called the Duck House, also located along Granary Creek, which now serves as a DNR conference center. Lastly, an old water tower still stands, located past the Osage Trail and next to Wye Island road. It is thought to be over 50 years old as well.

More historically notable, but privately owned, is Wye Hall, a home located on the east end of the island off Wye Hall Drive. The Georgian style home was built originally in 1790 for William Paca by James Hoban, the same architect who built the White House. It has since been rebuilt twice, once in 1879 after burning down, and then again in 1939 after the owners at the time had it torn down. Today's version of Wye Hall is very similar to Paca's with the only noticeable differences being the less ornate exterior trim and the absence of Palladian windows in each terminal wing.

Early drawing of historic Wye Hall

In addition, the once extensive formal garden in front of the house is missing. It is believed that the garden was constructed by some of the 100 slaves that were owned by Paca at the time.

There are remnants of a historical building on another privately owned parcel on the westernmost end of Wye Island. This building, once the manor house of John Beale Bordley, is now little more than rubble, but once contained secret underground tunnels constructed to give Mr. Bordley an escape route had the British invaded Wye Island. While it has lost much of its historical value due to its demolition, it still remains as a symbol of the island's storied past.

Archaeological Artifacts

Surveys of the NRMA in 1978 revealed 44 sites that contained Native American artifacts. Most of these sites were located along the indented parts of the southern and eastern shorelines of the island. Many projectile points associated with shell concentrations were found dating from the Archaic prehistoric period. These artifacts suggested that early Indian inhabitants of the island used it as hunting and fishing grounds. These Native Americans likely depended on oysters and probably supplemented their diets with deer and small mammals. Evidence of Indian presence was also gathered for the Woodland period, the last major prehistoric period. Eighteen separate sites revealed shell-tempered pottery that is characteristic of this time period. Here again the pottery was found in areas littered with shell midden. In addition, incomplete pieces of human bone were also discovered in several areas. One of the more striking artifacts found on the island were grooved axes which were located on the northern shoreline of the island. Unfortunately many of these pieces have been lost over the years to personal collections. It is prohibited to take any artifacts from the NRMA as they are considered public property.

EXISTING FACILITIES

DNR Lodge (or Duck House)

Facilities located on state grounds on the island are limited to one state operational residence, a rustic lodge, a picnic pavilion with grill shack, a park office, one old and one new maintenance shop, a single pier, and two pit toilets. The rustic lodge is used mainly as a DNR conference lodge but can also be rented out to the public. The picnic pavilion along with the grilling shack by Granary Creek can also be rented out to the public.

The pier and old maintenance shop are currently used for youth groups and students only. The only exception is that state employees have access to the pier for monitoring purposes. The older maintenance shop is primarily used for storage and for overflow from the group camping site. The pit toilets are located near the group campsite at Solo Cove and at the other campsite near Dividing Creek. These are both double units that are emptied as needed. A new pit toilet has recently been constructed near the old maintenance shop with two other single unit toilets proposed for each end of the Ferry Landing Trail. In general, all of the facilities at Wye Island NRMA are in good condition and require only minimal maintenance at the present time.

CURRENT USES

RECREATION

Recreational opportunities abound at the NRMA. Many visitors enjoy hiking, bird watching, horseback riding, and hunting around the area. For the past three years, recreation such as hunting and camping has generated approximately $17,900 per year for the state. There are currently 6 trails open for hikers and joggers. All of these trails except the sensitive Schoolhouse Woods trail are open to bikers. Organized recreational activities are kept away from the bald eagle nesting site to minimize disturbance, especially during the breeding season. Approximately a dozen picnic tables are also scattered around Wye Island for those who wish to enjoy a meal outdoors. The NRMA is open from 8:00 AM to sunset and the only land access to it is by a wooden bridge over the Wye Narrows River. Parking areas are located in various places around the NRMA but most of them are near the beginning of the hiking trails and adjacent to scenic views. See Map 2 for locations. Visitors are encouraged to practice "Leave no trace", taking everything they bring with them and nothing more. Launching of boats from the island is prohibited without a permit, but man-powered boats may use the soft landing sites to come ashore for a few hours. Other rules and regulations can be found on the information kiosks or in the information pamphlet.

Hunting

There are several hunting opportunities on the island. A managed deer hunt every fall is used to maintain healthy undergrowth and to lessen crop damage on nearby agricultural leases. The controlled deer hunts are by permit only and occur during bow season and sometimes muzzleloader season depending on population estimates. In addition, lottery hunts for ladies, the physically challenged, and juniors are offered during the early muzzleloader season.

Portable Handicapped Accessible Hunting Blind

Goose hunting is also done on the NRMA in designated pit blinds maintained by the land manager. For a small fee, as many as 4 hunters in a single blind can hunt from ½ hour before sunrise to 1:00 PM. Raccoon hunting is permitted as well between mid December and mid February. Fox chasing and field trials on the island provide additional opportunities for dog and horse owners.

Overnight Stays

Camping is permitted for educational and youth groups on a limited basis to groups such as Outward Bound. There are two main campsites, one at Solo Cove and another on Dividing Creek with an overflow site near the old maintenance shop. Each site fits approximately 25 people. The campsites were used on 87 different days this past year with the group size averaging about 12 campers. By reservation only, the Duck House

can be rented out for overnight stays at approximately $350 a night and can accommodate up to 25 people. It comes with a kitchen, beds, and living room.

Pavilion Use

The picnic pavilion can also be rented out. It has picnic tables, grills, and an overhang to shade the eating area. Nearby, a mowed grassy field provides room for games or other activities. This past year the pavilion and lodge were reserved a total of 104 days.

Equestrian Activities

Horseback riders have a variety of events in which they can participate on the island. Scheduled trail rides that are organized through local equestrian groups provide an enjoyable activity during many times of the year. Pointing dog field trials are also conducted on the NRMA from late October to early December and another popular equestrian event, fox chasing, occurs sometime between late November until December 31st. While these activities are not strictly equestrian, most participants choose to include horses.

All equestrian events must abide by strict guidelines in order to avoid damaging crops on the agricultural leases and to prevent the disturbance of bald eagles and Delmarva fox squirrels during their breeding seasons. Also, the fox chasing event is limited by lottery to 4 events per year by different equestrian clubs each only allowed 25 riders and 20 dogs per event. In addition, participants for all events are encouraged to avoid the Goose Management area as well as the eagle-nesting site. And finally, all equestrian events are also subject to cancellation due to inclement weather or overly saturated soil conditions.

EDUCATION

Wye Island NRMA is also used as an educational venue for various schools, youth groups, non-profit organizations, and training programs. Numerous service learning projects have been completed on the island by various individuals and groups. Some examples include the construction of the portable handicap blind by an eagle scout as well as the stabilization of a shoreline by Americorps volunteers. Other partnerships with schools have entailed assisting with the planting of shoreline grasses and building bluebird boxes to log volunteer hours needed for high school graduation. While they are on the NRMA, some of these same groups venture out on eco-tours learning about the natural surroundings and history of Wye Island. Outward Bound schedules approximately 25 events on the island per year involving group expeditions as well as solo camping experiences designed to strengthen the spirit and develop a sense of place in nature. Almost all interpretive programs involve some type of service learning project designed to support land management practices.

RESEARCH AND MONITORING

Several different groups have used Wye Island NRMA for research purposes. Currently, the University of Maryland leases the two fields nearest the wooden bridge to study the effect of dredge spoils on the quality of agricultural land. Another academic research project was aimed at determining the effect of wetland restoration in an agricultural setting on bird assemblages and

abundance. Other studies or monitoring projects on such things as deer tick prevalence, oyster culture sites, diamondback terrapin populations, and the effect of genetically engineered corn on monarch butterflies have been conducted on the state property as well. DNR or US Fish and Wildlife resource professionals have conducted most other research on the island. Many studies have been completed to assess the physical features or to monitor the populations of certain species. Species that have been specifically monitored on or around the island by the state or federal government include striped bass, blue crabs, bald eagles, Delmarva fox squirrels, wildfowl, great blue herons, and whitetail deer.

Research has also been undertaken in the past to determine forest composition and to investigate the area's archaeological history. In order to conduct a study within the NRMA one must first submit a proposal for review. After undergoing this review to make sure that the study does not conflict with the NRMA management goals, the project is then given authorization. The researching group or individual is then required to send the final results of the study to the DNR for public records.

ECOLOGICAL RESTORATION PROJECTS

Wetland Creation

The NRMA also serves as a demonstration area for many distinct types of habitat restoration projects. Specifically, in 1991 a 6.1-acre site off the east side of Tract 1 Forest and north of Granary Creek was designated as an area to be used to construct a nontidal wetland. Originally, the site was largely unproductive agricultural land. Due to its low yield and proximity to Granary Creek, it was seen as an ideal area to take out of production for wetland restoration. The site-specific goals of this project were to improve the water quality of Granary Creek and to increase wildlife habitat and nesting areas within the island. This demonstration area also served to help attain the statewide goals of increasing the total acreage of functional nontidal wetlands. In addition to the habitat and water quality benefits of this project, it was also meant to serve as an educational site for not only school children, but local political figures and resource professionals as well.

Wetland Demonstration site (before restoration)

Thus with cooperation between the former Water Resources Administration of the DNR and the Maryland Eastern Shore Conservation and Development Council, the site was taken out of agricultural production and converted to a nontidal freshwater wetland. Specifically, the wetland was constructed by blocking the agricultural drainage ditches and equipment ruts so that standing water could be retained on the area. Approximately half of the site was then planted in native hardwood wetland species such as maples, gums, and oaks. The other half of the site was then left to natural successional processes. Monitoring studies have been done to identify the

species that have colonized the area and to see how well the wetland enhancement methods have worked on this previously cultivated ground.

Shoreline Stabilization

Other demonstration areas include parts of the southern shoreline on Granary Creek upstream from the DNR Lodge and on the southeastern exposure of the point that extends out from Granary Creek Drive. Both of these shoreline areas were stabilized using non-structural techniques that included trimming trees, grading the bank up to the cliff, installing protective devices, and planting marsh grasses. The thought was that individual shoreline property owners could observe these shorelines in the future to assess the viability of these measures on their own property to reduce sediment and nutrient loads into their local water bodies.

Upland Habitat Creation

A third ecological restoration demonstration project has been the development of upland wildlife habitat in the form of warm season grass plots and fallow ground management. These plots have been planted in various locations around Wye Island, not only on state ground but on cooperating and neighboring landowner's property as well. These warm season grasses provide ideal nesting and foraging sites for many species of waterfowl.

FORESTED BUFFERS, RIPARIAN BUFFERS AND RESOURCE MITIGATION PROJECTS

Wye Island NRMA serves two other important purposes for the region as well. First, the island has 30+ miles of shoreline, which is significant for such a relatively small area. This makes the land uses highly influential on local water quality. For this reason, a barrier needs to be in place to slow sedimentation, erosion, and nutrient runoff from the mainland of the island. Tree plantings in the form of forested buffers and, to a lesser extent, grasses thus serve the purpose of water quality improvement. Tree roots help to retain soil and slow the flow of water while they take up the excess nutrients from fertilizer runoff. In addition, forested buffers on the property act as wind and snow breaks further alleviating the effects of erosion. This, in turn, helps maintain soil productivity on the surrounding leases that would be lost to wind and sheet erosion. Forested buffers are maintained along much of the shoreline of Wye Island as well as between agricultural fields.

Tree planting has also proved to be highly beneficial to resource mitigation projects. Specifically, tree planting has been done along various drainage ditches to protect water quality while slowing erosion. In addition, plantings around existing hedgerows and forested areas have discouraged the growth of exotic invasive species and provided more core habitat for native plants and wildlife. Finally, as noted earlier in this plan, tree planting has been used in creating wetland areas by retaining water and moist soil. Thus, tree planting at Wye Island NRMA has been used to improve the quality of the local and regional environments for all species. The most recent plantings this past year were done on the north side of Schoolhouse woods and on the western shoreline just north of Drum Point.

ISSUES AND CONCERNS

STATUS OF THE WYE RIVER WATERSHED: WATER QUALITY

The water quality of any river is affected by a variety of factors that include but are not limited to: agricultural and urban development, boating activities, flushing characteristics, point and non-point pollutant sources, forest resources, and the quality of riparian buffer. These different facets and more were taken into account when evaluating the water quality of the Wye and its branches. The waters surrounding Wye Island are described as being Use I and Use II rivers meaning that they are used for significant amounts of water contact recreation, aquatic life, and shellfish harvesting. According to the Unified Watershed Assessment, the Wye River watershed is classified under the category 1 and 3 headings. The significance of these classifications states that it is a watershed that currently meets neither clean water nor natural resource goals, but is also a sensitive watershed that requires an extra level of protection beyond the norm.

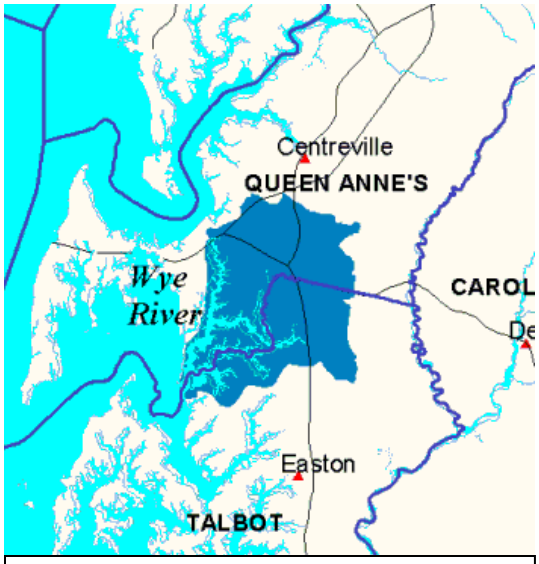
There is currently no long-term water quality monitoring stations on the Wye River or its branches. However, several stations are located in the small freshwater feeder streams to the Wye and are monitored by Maryland Biological Stream Surveys (MBSS). MBSS, in 2002, sampled a total 7.3 square miles of the tidal main stem and tributaries of the Wye. This, combined with land use information and additional water quality data from neighboring tributaries, suggests that water quality is good in the deeper lower areas of the Wye but degrades further upstream. The Maryland Department of the Environment conducts periodical shellfish sanitation surveys along certain stretches of the Wye River. From these surveys they have found it necessary to close portions of the Wye to shellfish harvesting and swimming activities due to high fecal coliform counts. These high bacteria counts are believed to be the result of poor flushing, natural marsh runoff, failing septic systems, boating-related pollution, and high nutrient level runoff from agricultural lands. Currently, the Wye is experiencing rather high nitrogen and phosphorus loadings which seem to be the predominant cause of eutrophication. However, even with these high loading levels, the Wye still is believed to hold some of the best habitat for subaquatic vegetation (SAV) restoration.

The Wye East River

Toxicity data for the Wye was gathered from two main sites. The general findings indicated that the Wye is very clean. The only finding that led to concern was the presence of a high level of unionized ammonia at the station near Quarter Creek in the fall where it was found to be almost double the amount of the EPA continuous criteria for saltwater. Otherwise, heavy metal, organic, and pesticide contaminants were all well below the recommended EPA standards.

Typically, salinity of the Wye ranges between 7 and 13 ppt depending on recent weather patterns and precipitation. In

1993, sampling on the tidal areas of the Wye showed adequate dissolved oxygen levels with readings from the bottom never dipping below the minimum 5.0 mg/L standard. Meanwhile, dissolved oxygen levels recorded for the entire Chester River Basin (of which the Wye is a part) in 1995 indicated that these river systems did not consistently maintain 5.0 mg/L for approximately 48% of the total stream mileage. This, undoubtedly, must have an effect on the aquatic life in the Wye River. In general however, bio-assessment data from the Wye showed that it was only minimally impacted by a small amount of impaired habitat mostly in the less saline reaches of the river. Relatively high, tidal fish Index of Biological Integrity (IBI) scores indicate a reasonably healthy fish community.



Wye River Watershed (colored blue)

While the Wye would not be labeled as a pristine river by water quality standards, it is fairly healthy from a biotic standpoint. Its future health depends largely on the land use changes that will likely occur within its watershed. Currently, about 3.6% of the total Wye River watershed acreage is classified as being used for urban areas. In contrast, almost 70% of the watershed is being used for agricultural practices. Meanwhile, approximately 30% of the streamside mileage is unbuffered, thereby suggesting a possible reason for the high nutrient loadings present in the Wye.

Projected growth in the Wye River watershed will be largely limited to Queenstown, which is located in the northeastern most part of the watershed. It is the only incorporated municipality within the watershed and as such, the only designated growth area according to the recent smart growth initiative that directs growth into already established communities. The rest of the Wye River watershed is mostly maintained in agricultural easements and/or deed restricted zones, thus, land use changes are not foreseen for much of the area. Optimistic estimates predict little change in the water quality because of this. Increasing usage of Best Management Practices (BMP's) by local farmers is thought to also reduce nutrient loadings into the river. In addition, with the Critical Area Law in place, it is possible that more of the riparian landowners will implement streamside buffers further filtering out sediment, pesticides, and nutrients. All in all, drastic land use changes are not expected to occur within this watershed. All in all, with the exception of the designated growth area at Queenstown, drastic land use changes are not expected to occur within this watershed.

WILDLIFE/RECREATION CONFLICTS

As the majority of recreational activities on Wye Island NRMA are generally low impact, most of the conflicts between wildlife and recreation involve equestrian events. Due to the size and biology of horses and the events in which they are used, they tend to have the largest effect on the surrounding ecosystem. Before the present time constraints were put into place on these equestrian events, there was a conflict between these activities and the management goals for protecting bald eagles and Delmarva fox squirrels. Typically, the breeding/nesting season of the

bald eagle runs from the end of December to anytime around mid June. Delmarva fox squirrels usually breed and nest in a time frame between early January to mid May. This presented a concern since horse riders were disturbing the areas that these species inhabit during their sensitive breeding seasons. Since enacting the restraints on the time of the year that these activities could take place, the effect on these species by equestrian events has been reduced.

More recent complaints of conflicts involving horseback riding are those dealing with the deer population. Though the equestrian events are not believed to have adverse effects on deer reproduction or survival, they do tend to chase deer off the island during the fall hunting season. Lastly, horseback riding also has the detrimental effect of causing increased erosion on trails and thus also habitat for some animals. This has been lessened somewhat by the restriction of some trails to foot traffic only (such as Schoolhouse Woods) and also temporary closings during periods of abundant rainfall.

Another recreational activity that can have a substantial effect on the local wildlife is boating. Here, concern revolves around the noise and wake caused by boats. Wildlife and fish may feel threatened when a particularly large and noisy boat approaches their nest, burrow, or feeding area. This may cause them to temporarily or permanently vacate the area.

Other conflicts between wildlife and recreation on the NRMA include such things as Delmarva fox squirrels and motor vehicles. As often happens when wildlife attempts to cross the road, some are inevitably struck and killed. One of the few possibilities might be to create larger blocks of forest for the squirrels so that they would not have the need to cross any roads for their food or habitat requirements. A reduced speed limit near known squirrel-crossing areas could also help to lessen squirrel mortality.

Another conflict that occurs is that between campers and the local wildlife. While not much has been studied on the effect that campers have on wildlife, they most likely do displace a small number of wildlife species that would otherwise inhabit the area that is being used as a campground. Campers also undoubtedly have an impact, however small, on the local habitat through building fires and clearing the ground on which to pitch a tent.

The only other conflict that arises with the wildlife on the NRMA is that concerning mute swans. Mute swans have been blamed for the depletion of SAV beds, upon which finfish and shellfish depend for cover. Citizens have thus complained that the swans are reducing the abundance of these species for recreational fishing and crabbing. In addition, mute swans have been known to displace native birds including the endangered least terns and black skimmers. As a result, Wye Island NRMA is a participant in the DNR's plan to reduce mute swan numbers. Currently, this is taking place on the island through a combination of addling and oiling eggs as well as other lethal methods to reduce the number of subadult and adult mute swans.

BIODIVERSITY CONSERVATION

One of the main goals of any NRMA is to protect the diversity of rare species and their habitat. Avoiding species extinctions and habitat degradation comes first and foremost when managing any state property. Wye Island NRMA is home to several species that are rare, threatened, or endangered. The concern with these species, that if not protected and managed for properly, is

that their populations will soon approach unrecoverable levels, thus essentially becoming extinct. This, as a result, would diminish biodiversity within the region as each native plant or animal is seen as occupying a valuable niche. Without this niche being filled, it could possibly lead to other species declines as prey species or keystone predators are lost. A secondary consequence from this would be the loss of another wildlife or plant species for viewing. Nature enthusiasts obviously find this unacceptable. Specifically, on Wye Island, several species fall into this category including the Delmarva fox squirrel, bald eagle, great blue heron, and FIDS. Maintaining healthy populations of these species is of utmost concern to the state. As such, several measures have been taken to preserve their habitat and protect them during their breeding seasons. For the Delmarva fox squirrel and FIDS large contiguous blocks of forest on the NRMA are maintained and protected against cutting and or trail construction. In addition, for the bald eagle there is a year-round buffer zone allotted for the nesting site so as not to disturb the wary bird.

Other biodiversity concerns center around conserving the unique ecological communities or habitats on the island. The most notable one on Wye Island is the old growth forest known as Schoolhouse Woods. This block of woods is one of only a few on the Eastern Shore of Maryland that has not been cut down at one time for timber or for agriculture. Interest in its preservation has led to plantings along the sides of it in order to shade out exotic species and provide a windbreak to prevent the mature trees from becoming uprooted. Concern has also been expressed at the NRMA for providing a diversity of habitats for all wildlife and invertebrate species. Rather, several wetlands have been constructed on the property and a large number of fields are now maintained as grasslands with periodical mowing.

Shoreline along Granary Creek that received nonstructural stabilization

SHORELINE EROSION

Shoreline erosion is an ongoing process that plays an integral role in Wye Island's ecosystem. At a rate of approximately two feet per year, erosion is of concern to the Wye Island NRMA; however not an imperative threat.

Fifteen total miles of shoreline have had some sort of shoreline stabilization. However, there are a few additional areas that are of immediate concern. One such location is a 1,200-foot southwestern exposure of Drum Point near the 150-acre private parcel. Funds have been obtained for this site, though construction has not started. Engineering is needed, as well as manpower, for the construction of shoreline stabilization. The southwestern exposure of Jury Neck is another area of special concern that necessitates further stabilization due to the high-energy southwestern winds. This shoreline area is approximately 1,725 linear feet in length. The Shoreline Erosion Control Division's recommendations for its stabilization include clearing falling trees and vegetative plantings. Stone riprap has also been considered for use on the outermost edge of the beach. A third area of concern that needs further stabilization is the southern most exposure of the eastern shoreline of Dividing creek. Heavy boat traffic combined with a lack of adequate sunlight cause this area to be very unstable. Suggested stabilization measures include tree trimming and vegetation planting. Map 4

illustrates areas that have been structurally and non-structurally stabilized as well as those in need of shoreline protection.

Additional projects that hope to be accomplished in the year 2003 include maintenance to the existing shoreline projects along the south shore and stabilization of a new area on the eastern exposure of Jury Neck. Shading vegetation that will prevent the growth of emergent plant growth along the beach will be removed from both of these areas.

Much of the areas that have the worst cases of erosion have already been treated in some manner. However, continual monitoring of shoreline projects and susceptible areas is necessary, as shoreline refurbishment has already been needed in several locations. Most recently, in 2002, 100 linear feet of shoreline along Granary Creek needed additional stabilization measures to secure the littoral sediment. Still, all of these stabilization methods do not come without a cost. Even the most simple stabilization measures can be extremely costly. Beach replenishment and coir logs edging, compressed cylindrical natural fibers that are tied together, can cost as much as $50-$100 per foot. The prices only increase as more complicated structural stabilization measures are taken. These coupled with the fact that most state-owned lands (including Wye Island NRMA) operate on small stringent budgets, means that all non-structural stabilization options need to be considered before authorizing costly structural projects. An additional concern is often from whom can the money be obtained. State budgets are very tight and in many cases, outside funding is needed to complete projects such as these. This will be a definite hurdle for future stabilization projects.

Currently, safety concerns are few as the erosion is occurring at a comparably slow rate and there are few steep banks that pose hazards to recreational users. Probably the most dangerous situation presented by the erosion of Wye Island's shoreline is the loss of shoreline trees that may fall unexpectedly on or near public use areas. For the most part though, these trees are cut before they pose any serious harm to NRMA visitors.

With land use policies on the NRMA unlikely to change in the near future, added pressures regarding shoreline stability are not likely to arise. Factors which do cause concern for the integrity of Wye Island's shoreline in the future include neighboring land use changes, sea level rise, and most importantly, increasing amounts of boat traffic along the Wye and Wye East Rivers. Adjacent private landowners in both Queen Anne's and Talbot County could have small impacts on the shoreline of the NRMA. If they were to decrease shoreline vegetation, this would eliminate windbreaks and possibly allow more wave action and thus increased erosion along the shoreline of Wye Island. The occurrence of sea level rise could also play an increasingly important role in the erosion processes of Wye Island as more of the island becomes submerged. Finally, as the eastern shore region of Maryland becomes more developed, increasing numbers of boaters navigate the tidal waters adding to the amount of boat wakes that crash along the shoreline of Wye Island. This also suggests reason for concern in maintaining the structural integrity of the NRMA's shoreline.

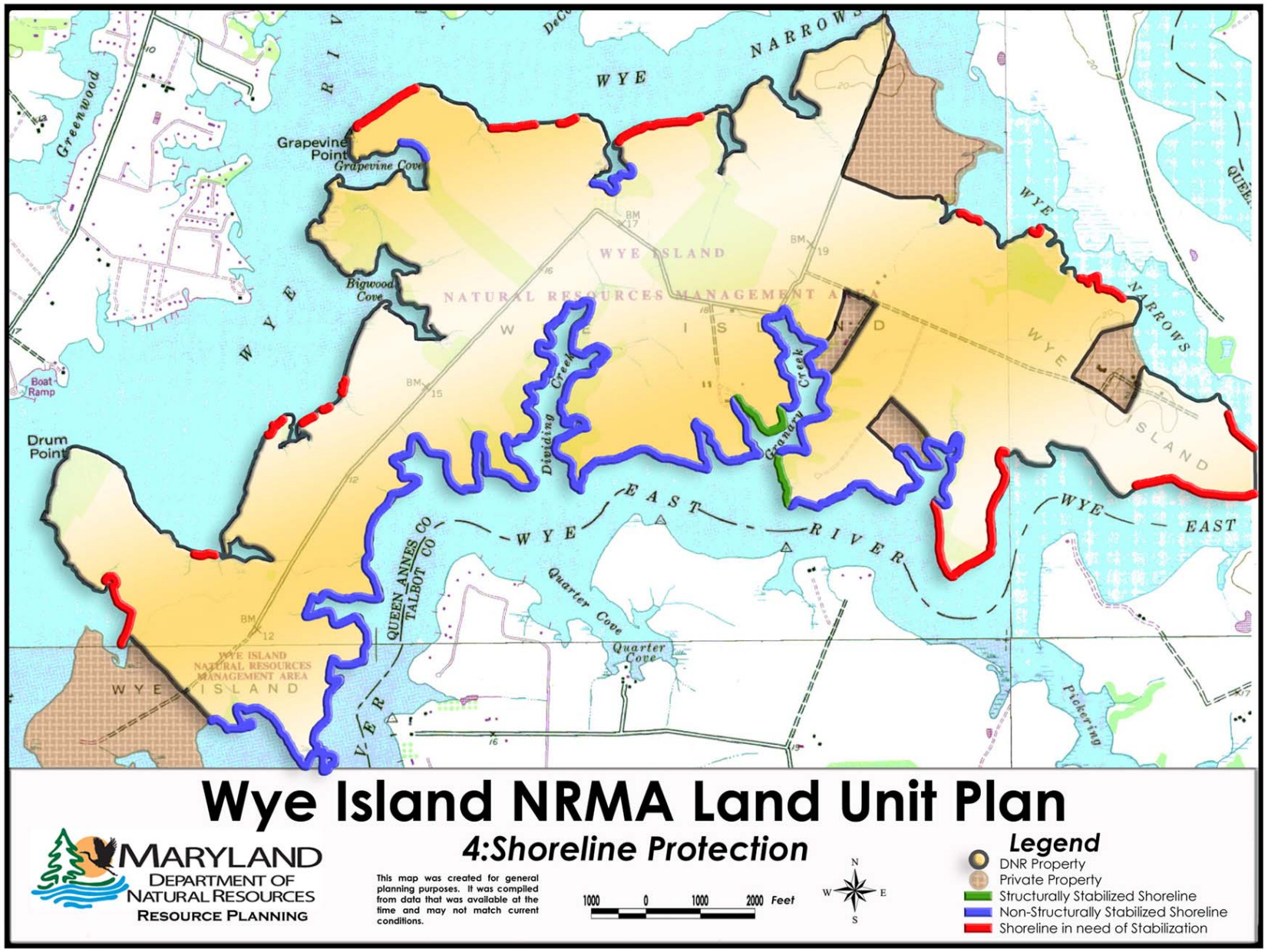
TRAIL SYSTEM CONSIDERATIONS

Currently, the trail system at Wye Island NRMA is established. However, minor upkeep is needed to maintain safe trails for the various user groups that use them. The current trail system can be seen on Map 5 and there are no proposals at this time for any additional trails. Nevertheless, several issues have arisen with these existing trails. First, concern has been expressed by those within the DNR as to the level of disturbance to sensitive species that may occur due to the use of trails. Particularly, this has been related to the Delmarva fox squirrel habitat, goose management area, and the bald eagle nesting site. All trails were thus constructed to avoid both the eagle nesting site and goose sanctuary. Trails that venture through DFS habitat were made with minimal forest clearing. Any new trails would have to follow the same guidelines. A second consideration given to the trail system at the NRMA is what type of users to allow on each individual trail. Currently, only the Schoolhouse woods trail is limited year-round to foot traffic only. All other trails are considered multi-use. The rare old growth forest coupled with sensitive soils make this area less than ideal for the more damaging bike and horse riding activities. In addition, this trail should also be limited to small groups. Larger groups will cause increased traffic in the area and may stray off of the path leading to other disturbances in this sensitive area. This must be made clear to visitors and the trail should be monitored for compliance to assure its preservation.

Along the same lines, the management of these trails should take into account the effect that wet weather has on their condition. In particularly wet periods, the land manager has deemed it necessary to close certain trails due to the increased opportunity for erosion to take place. This practice should be used in the future to help preserve the trails and to prevent ruts from forming. Another concern for the trail system at Wye Island is potential overuse. Increasing visitor usage may cause adverse impacts on not only the quality of the paths, but on the nearby wildlife habitats. It has been suggested that visitor numbers be monitored with sign-in sheets and trip lines so that this can be more accurately assessed. If it is found that overuse is causing noticeable trail destruction or environmental degradation, then this trail(s) should likely be considered for temporary or even permanent closure.

In conclusion, future trails or maintenance of existing trails should always take into consideration a variety of factors including but not limited to:

1. The surface of the trail: Trails should be made or maintained using natural turf, grass, leaf litter, etc. Materials such as stone, wood chips, oyster shells, tar and chips, blacktop, and concrete should be avoided so as not to construct semi- or entirely impervious surfaces.
2. Tree removal: Clearing of trees should be avoided at all times and if possible, a canopy should be left over the trail. Dead trees should also be left as found if possible, except for moving these to either side of existing trail pathways.
3. Wetland avoidance: All wet or moist soils should be avoided as trail use in these areas would cause extensive erosion.
4. Riparian buffers: New trails should be kept out of riparian buffers so as not to conflict with enhancement goals and to prevent the different types of runoff.
5. Conservation Reserve Program and Conservation Reserve Enhancement Program land: Trails should not widen in areas that traverse these lands and possible future trails should avoid them altogether.


Wye Island NRMA Land Unit Plan
4:Shoreline Protection
MARYLAND
DEPARTMENT OF
NATURAL RESOURCES
RESOURCE PLANNING
This map was created for general planning purposes. It was compiled from data that was available at the time and may not match current conditions.
1000 0 1000 2000 Feet
N
W
E
S
Legend
DNR Property
Private Property
Structurally Stabilized Shoreline
Non-Structurally Stabilized Shoreline
Shoreline in need of Stabilization
WYE RIVER
WYE EAST RIVER
NARROWS
Grapevine Point
Grapevine Cove
Bigwood Cove
Boat Ramp
Drum Point
Dividing Creek
Granary Creek
Quarter Cove
Pickering
QUEEN ANNES CO
TALBOT CO
WYE ISLAND
NATURAL RESOURCES MANAGEMENT AREA
Greenwood

SHORELINE ACCESS

The NRMA, being completely surrounded by water would seem like the ideal place to have a public boat launching facility. However, due to the sensitive nature of the island, having such facilities has been deemed inappropriate. Currently, there are no areas on the island to launch a vessel of any kind. One pier on Granary Creek that is restricted to youth groups and NRMA personnel, as well as three soft landing sites scattered around the island are the only accommodations provided for boating enthusiasts. Issues dealing with shoreline access have been constantly reviewed for Wye Island. The concern here is attempting to reconcile conflicting goals, one of providing adequate shoreline access for visitors and the other, protecting historic waterfowl concentration areas from destruction.

It has been noted that numerous visitors have expressed interest in having more opportunities to launch and land boats on the island. However, concern arises as to the impacts this will have on waterfowl and shoreline habitat. Many of the shoreline soils of Wye Island are characterized as not being suitable for high impact use. Increased boat traffic, especially by motor-powered boats would inevitably cause increased erosion due to wakes and inadvertent groundings. Currently, it is estimated that approximately 75-80 individuals are utilizing the pier per year. Even this has raised apprehension by resource professionals within the DNR. Just as relevant is the fact that there are two public launch and landing facilities already located in the close vicinity of Wye Island, and therefore, more are not needed. These sites are Bryantown Landing (not shown on map), and Wye Landing. The location of Wye Landing can be seen on Map 5.

Presently, the three soft landing sites allow only for human-powered vessels to come ashore for the day. A fourth has been proposed along Granary Creek. Thus far, concern has been expressed as to the amount of increased boat traffic that this will encourage. No plans to construct this landing site have been made to date. All environmental and ecological factors should be considered in deciding whether to approve this project, as well as impacts on neighbors.

SITE PLAN

SITE GOAL

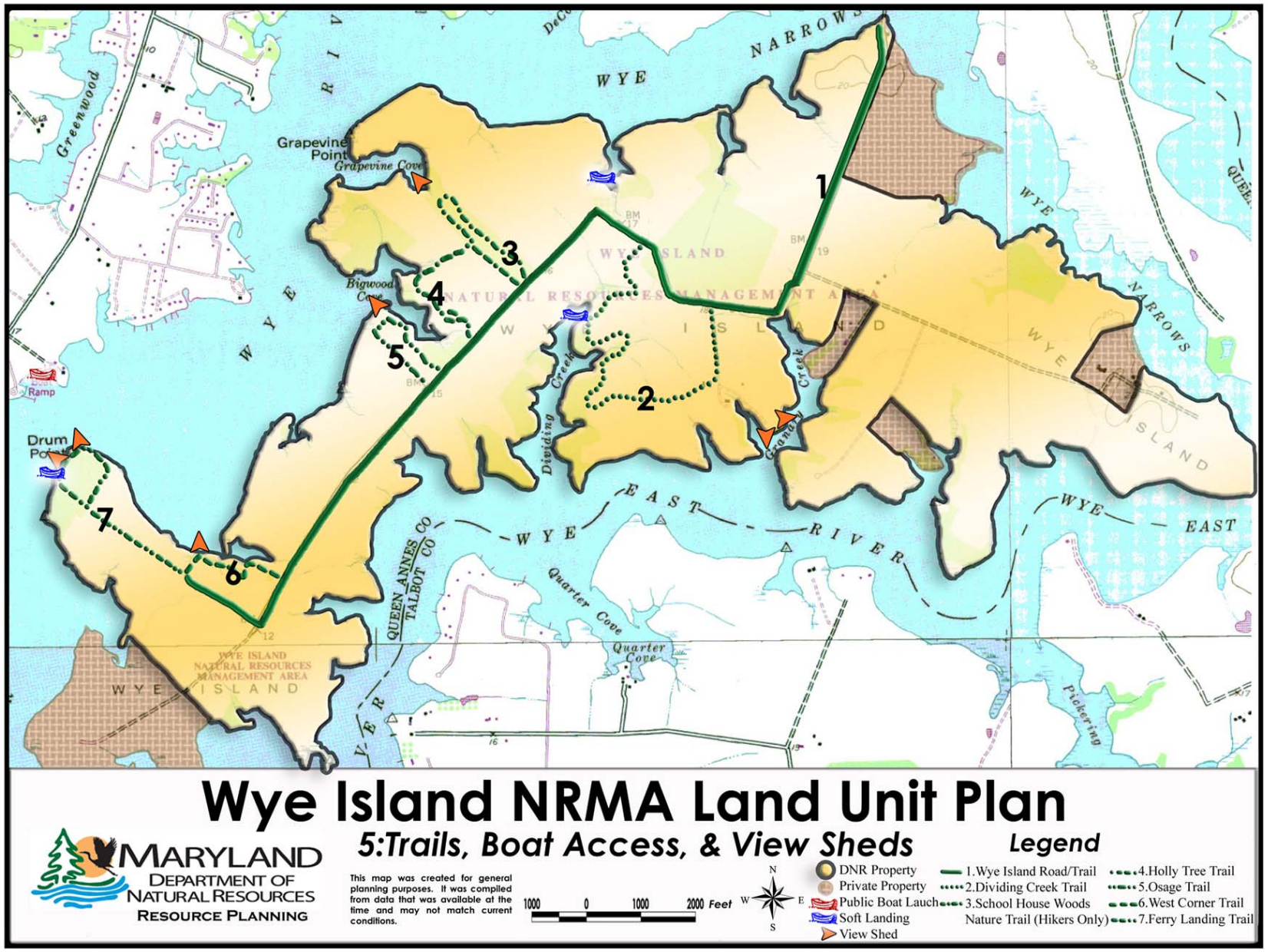
The goal for Wye Island is to maintain and enhance the existing improvements such as the trails, pavilion, and lodge as well as to educate the public regarding natural resources protection and management.

PROPOSED FACILITIES

Consistent with the goal, a small number of improvements have been proposed for Wye Island NRMA. For the most part, all necessary structures have already been built. Future plans that have been considered center mainly around improving existing structures and facilities. A few improvements have been contemplated for the DNR conference lodge. In particular, it has been suggested that the bathrooms be made handicapped accessible, the heating plants be replaced, and that air conditioning be added. Another proposed improvement that has yet to be reviewed is paving the parking area around the lodge.

Some other ideas for improvements on the NRMA have also been expressed. Suggestions for the picnic pavilion include paving the driveway, and adding a new grilling/cooking area. However, these projects will go through a review process to ensure minimal impact to the NRMA. An interdisciplinary (ID) team within DNR will consider the potential environmental impacts before allowing the construction of any new facilities at the NRMA.

Proposals have also been made as to the future use of the old maintenance shop. The most likely use would be a full-time group campsite. Currently, it only serves to accommodate any overflow campers from the Solo Cove campsite, providing primitive style camping with some shelter in case of inclement weather. If the maintenance shop is used full-time for camping, renovations are proposed for the interior to provide more comfortable accommodations. Finally, it has been proposed that two pit toilets are needed for hikers at either end of the Ferry Landing Trail. All of the above proposals will go through an ID team review, as do any other proposed future improvements or facilities.


Wye Island NRMA Land Unit Plan
5:Trails, Boat Access, & View Sheds
Legend
MARYLAND
DEPARTMENT OF
NATURAL RESOURCES
RESOURCE PLANNING
This map was created for general planning purposes. It was compiled from data that was available at the time and may not match current conditions.
1000 0 1000 2000 Feet
N
W
E
S
DNR Property
Private Property
Public Boat Lauch
Soft Landing
View Shed
1.Wye Island Road/Trail
2.Dividing Creek Trail
3.School House Woods Nature Trail (Hikers Only)
4.Holly Tree Trail
5.Osage Trail
6.West Corner Trail
7.Ferry Landing Trail
Grapevine Point
Grapevine Cove
Bigwood Cove
Drum Point
Ramp
Greenwood
WYE RIVER
WYE NARROWS
WYE ISLAND
WYE ISLAND NATURAL RESOURCES MANAGEMENT AREA
Dividing Creek
Ground Creek
WYE EAST RIVER
QUEEN ANNES CO
TALBOT CO
Quarter Cove
Pickering
1
2
3
4
5
6
7

MANAGEMENT RECOMMENDATIONS

The Wye Island NRMA Resource Management Team, an interdisciplinary technical team, met periodically to evaluate the existing conditions and intended uses of Wye Island NRMA, and to develop the following goals and management recommendations.

The Wye Island Resource Management Team recommends that the management, development and use of the Wye Island NRMA over the next ten to fifteen years be designed to implement the following major goals:

1. To identify, conserve, restore, enhance, research and monitor the natural, historical and cultural resources of Wye Island;

2. To recognize the roles Wye Island NRMA plays in the ecosystem of which it is part, and to manage the site to minimize ecosystem degradation and contribute to ecosystem health;

3. To provide for public enjoyment of the resource through resource-based recreation, within the constraints imposed by wise stewardship of resources and by the need to be a good neighbor to nearby landowners;

4. To practice sound management and serve as a showcase for the best management of resources; and

5. To provide sound and effective environmental education to visitors.

GOAL # 1: RESOURCE PROTECTION

TO IDENTIFY, CONSERVE, RESTORE, ENHANCE, RESEARCH AND MONITOR THE NATURAL, HISTORICAL AND CULTURAL RESOURCES OF WYE ISLAND

The underlying goal of management of Wye Island Natural Resource Management Area must be the conservation of its resources. The intrinsic value of the NRMA is in its abundant resources, including:

- Approximately 30 miles of shoreline, with an intermittent marsh fringe;
- Approximately 500 acres of forest land, including forest interior dwelling species habitat;
- Riparian and shoreline forest buffers;
- Waterfowl concentration areas and other significant wildlife populations;
- Forested wetlands;
- Archeological & historical sites;
- Threatened and endangered species;
- Rest areas for neotropical migrant birds;
- Old growth woods;
- Geologic resources – sand;
- 1300 acres agricultural land;
- Soils - primarily wet soils, drained for agriculture; plus high banks with upland soils;

- Fish and shellfish in the waters surrounding the NRMA

Without a clear priority on conserving these resources, their health and abundance may be diminished. The steps recommended by the interdisciplinary team to fulfill this goal include:

Identification - Use existing databases as a baseline for deciding the needs for further inventory. While much is known about the resources of Wye Island, much is not yet known. For example, expanded inventories should be conducted for invertebrates, small mammals, rare, threatened and endangered plants; and fish, shellfish and other aquatic species in the waters surrounding the island. This information should be mapped using a Geographic Information System (GIS) and the resulting information should be shared with resource professionals.

Conservation - Many of Wye Island's resources are fragile in a number of ways and are in need of conservation. For example: waterfowl need sanctuary where they can feed and rest undisturbed; old forests lose their unique character if not protected from invasive exotics and from the removal of trees or woody debris; eagles will abandon their nests if overly disturbed during the nesting season. Written guidelines for the conservation of each sensitive species known to occur at Wye Island NRMA are included in Appendix I of this document and should be followed routinely during all management decisions. Guidelines may be revised periodically and land managers will be provided with a copy of revisions. Additional guidelines will also be provided if any more sensitive species are discovered on the land unit.

Departmental environmental review policy should be followed and all projects indicated on the environmental review checklist as requiring project review should be submitted in advance and in writing, to Resource Planning, so that rare species or other resources are not inadvertently impacted.

The conservation of resources is inherent in all of the goals for management of Wye Island NRMA, and thus Goals #2 through #5 also address a number of specific management actions recommended in order to conserve natural resources.

Restoration and Enhancement - The native vegetation of Wye Island was primarily bottomland hardwoods. Many of the soils are wetland soils and some of these forested wetlands should be restored. The old growth forest found at Wye is very rare entity on the Eastern Shore. It occurs in only a narrow strip, vulnerable to destruction by storms or high winds, and needs to be buffered by restored forest adjacent to the old growth tract. Fisheries habitat can also be improved by implementing more effective nutrient management methods to increase water quality. In addition, several areas along the shoreline of Wye Island are in need of further stabilization, which will prevent land loss and benefit all forms of wildlife. Reducing sedimentation through vegetative means will help phytoplankton levels increase and allow more light to penetrate to the bottom, thereby providing better conditions for submerged aquatic vegetation.

Research and Monitoring - The only way to understand trends in plant and animal populations, natural communities and other resources is to develop regular research and

assessment programs to better understand and monitor changes in population status. Examples include ongoing monitoring of Delmarva fox squirrels and bald eagles. Research partnerships with the Wetlands Institute, local colleges, and other partners should be continued and expanded.

GOAL # 2: ROLE IN THE ECOSYSTEM

TO RECOGNIZE THE ROLES WYE ISLAND NRMA PLAYS IN THE ECOSYSTEM OF WHICH IT IS PART, AND TO MANAGE THE SITE TO MINIMIZE ECOSYSTEM DEGRADATION AND CONTRIBUTE TO ECOSYSTEM HEALTH

Wye Island NRMA covers most of the land area of a peninsular island with significant forest resources and extensive protected shoreline, located in a region experiencing increasing development pressure and habitat loss. Wye Island is part of the Wye River Watershed and the Outer Coastal Plain Mixed Forest Ecoregion Province. The Resource Management Team found that the outstanding ecological roles of the NRMA in these systems relate to its extensive and diverse wildlife habitats, its contributions to the conservation of native biodiversity, and its potential to help reduce degradation of the Wye River watershed and the Chesapeake Bay.

Recommended management strategies to conserve and enhance the wildlife and biodiversity value of Wye Island NRMA include the following:

- Continue to follow best management practices for erosion control, nutrient and soil management, water quality enhancement, and control of noxious weeds.

- Continue to design and refine custom agricultural leases under which farmers are required to follow best management practices. Leases should lead to wildlife-friendly practices such as leaving stubble in fields and planting rows of corn near forest edges as food for Delmarva Fox squirrels and other wildlife. Management for Canada geese should continue to be a primary focus of the farming program. Plans to convert farmland to other uses should consider the impact these changes would have on Canada geese. Changes in the farming program that significantly reduce the value of Wye island to Canada geese should be avoided.

- Design an updated Forest Management Plan that is specific to Wye Island NRMA.

- Increase forest acreage available for use by neotropical migrant birds, forest interior dwelling species, and other wildlife. Conserve existing forests, and plant and nurture new forest areas, through projects such as the planting of forested shoreline buffers. Seek to restore some old fields to their historic native forest type using the experimental methods of forest restoration research and monitoring.

- Maintain old growth forest (Schoolhouse Woods) by planting forest buffers on either side of the strip and removing exotic invasive species. Also, all coarse woody debris on the forest floor - downed trees, fallen logs - should be left in place. When blow downs block the trail, only the piece blocking the trail will be cut away. This site should be continually monitored to assess the success of management measures and to change if necessary.

- Evaluate recreational uses of the NRMA for potential impacts to important wildlife habitat areas, and restrict or modify recreational activities as necessary to conserve wildlife, especially sensitive species.

- Establish some large fields of native warm season grasses for wildlife food and habitat.

- Develop a plan to control invasive exotic species on the NRMA, including where each problem species occurs on the site and a strategy for eradication or control at each location.

- Maintain existing hedgerows and brushy areas, and plant additional wildlife-friendly elements: hedgerows, warm season grasses, and mast and berry producing trees and shrubs.

Wye Island is located near the mouth of the Wye River watershed. The shoreline marshes and waters surrounding Wye are important habitats for fish and shellfish. The waters that flow around Wye Island soon enter the Chesapeake Bay. One of the DNR's desired Outcome #1 is to "support a vital and life sustaining Chesapeake Bay and its tributaries". Protecting Maryland's waterways from pollutants remains the most critical factor in improving the health of the Bay.

The Wye River watershed has been identified as one of the eleven highest priority watersheds (out of a total of 138 in Maryland) for restoration under Maryland's Clean Water Action Plan. Only three watersheds on the Eastern Shore have this distinction. They are highly significant because they fall into both "Category 1 Priority" and "Selected Category 3", which means in essence that they are both degraded yet still biologically rich - highly threatened yet very much worth saving.

Specifically, being a Category 1 Priority watershed means that the watershed does not meet clean water or other natural resource goals and that it is among those watersheds most in need of restoration during the next two years. Category 3 means that a watershed is considered pristine or sensitive based on a suite of indicators measuring biological and landscape characters such as forest density, spawning areas, and imperiled aquatic species. Selected Category 3 watersheds are the most pristine or sensitive in that they meet four or more Category 3 criteria. Watersheds such as the Wye River watershed, that fall into *both* of these categories *(Category 1 Priority and Category 3)* deserve special attention in order to reverse or slow degradation before the pristine resources are lost.

Strategies by which the NRMA can contribute to the restoration of the watershed include activities that will reduce ecological impacts such as pollution from nutrient and pesticide runoff, and activities that will improve fish and shellfish habitat. Examples of such strategies include:

- Monitor/limit fertilizer and pesticide application and require farmers to use the lowest effective amounts;

- Expand vegetated shoreline buffers throughout the property to a minimum of 100 feet;

- Plant shoreline marsh grasses and remove selected overhanging woody vegetation in areas where additional sunlight is needed to enhance existing emergent vegetation beds;

- Develop an Integrated Pest Management Program;

- Continue discussions and partnerships with the Upper Eastern Shore Tributary Strategies Team of the Chesapeake Bay Program;

- Establish long-term water quality monitoring stations on the Wye River or its branches;

- Seek funds to support nutrient reduction activities through the Clean Water Action Plan or other sources; and

- Participate in DNR's Eco Assessment or a similar program to identify further ways to reduce ecological impacts through management approaches.

GOAL #3: RESOURCE-BASED RECREATION

TO PROVIDE FOR PUBLIC ENJOYMENT OF THE RESOURCE THROUGH RESOURCE- BASED RECREATION, WITHIN THE CONSTRAINTS IMPOSED BY WISE STEWARDSHIP OF RESOURCES AND BY THE NEED TO BE A GOOD NEIGHBOR TO NEARBY LANDOWNERS

Another of DNR's desired outcomes is to promote enjoyment of diverse outdoor recreational opportunities for citizens and visitors. Wye Island offers a scenic countryside experience, convenient to many potential visitors, at a time when recreational demands of all sorts are increasing. Visitors to Wye Island may enjoy a wide range of resource based recreational pursuits in a beautiful outdoor setting within the guidelines of good resource stewardship.

Examples of current recreational activities permitted at Wye Island NRMA are listed below. These forms of recreation should be continued, with potential restrictions to some activities as described:

- Hiking and jogging, on designated trails and areas not closed to visitors;
- Biking and horseback riding, with closures as necessary due to soil conditions;
- Nature study and appreciation;
- Canoeing and kayaking;
- Recreational boating at low speeds;
- Hunting, following season limits, area closures, and permit requirements determined by land manager in conjunction with Wildlife and Heritage Division;
- Fishing and Crabbing, also subject to season limits, and license requirements;
- Lodge/Cabin Use - rentals, DNR departmental meetings;
- Pavilion Use;
- Service Learning Projects;
- Eco-tours - e.g. Living Classroom, Amphibious Horizons, Atlantic Canoe and Kayak; and
- Outward Bound outdoor challenge programs.

Some of the activities currently conducted at Wye need to be evaluated for impacts to wildlife and other resources. Levels of use of these activities may need to be reduced or maintained at current levels but not expanded. For example, fox chasing and field trial use levels have been recently modified to reduce potential wildlife impacts. These modifications should be maintained. Other activities are listed below.

- Due to potential impacts to trails, overall levels of equestrian use should be closely monitored, and modified if necessary. For example, trails may be closed to horses and bicycles during wet conditions. Groups may not consist of more than 25 riders and may be required to make arrangements with the managers ahead of time. The need for a permit process will need to be considered.

- Youth camping, outdoor challenge camping, and all activities that involve camping, extended stays, or large groups should be monitored for impacts and conducted in areas where they will not impact sensitive resources. Alternative sites could be sought for camping if levels of demand increase unacceptably or if impacts from continuing use at current levels are found to be high.

GOAL # 4: SHOWCASE FOR BEST MANAGEMENT

TO PRACTICE SOUND MANAGEMENT AND SERVE AS A SHOWCASE FOR THE BEST MANAGEMENT OF RESOURCES

Wye Island NRMA seeks to be a leader in the implementation of best management practices (BMP's) and to provide sites that serve as demonstration areas for BMP's for school groups, other land managers, and executive staff. Examples of such demonstration areas could include:

- forested shoreline buffers;
- structural and non-structural shoreline erosion control;
- restored and created wetlands;
- forest restoration research and monitoring project;
- forest management practices and BMP's;
- rare, threatened and endangered species habitat conservation and monitoring;
- conservation of old growth forest;
- customized agricultural practices to benefit wildlife, water quality and the ecosystem;
- warm season grass plantings; and
- integrated pest management (IPM) demonstration.

Some other practices should also be considered in the future for the management of the NRMA's resources. One of these is the possible funding of new BMP's by encouraging farmers to sign up for the Environmental Quality Incentive Program (EQUIP). Another sound management decision that should be implemented includes following the University of Maryland guidelines based on the growth stages of various crops.

GOAL #5: EFFECTIVE ENVIRONMENTAL EDUCATION

TO PROVIDE SOUND AND EFFECTIVE ENVIRONMENTAL EDUCATION TO VISITORS

The value of the conservation of natural resources at Wye Island Natural Management Area is increased if it serves to increase understanding of and support for natural resource stewardship by Maryland citizens. One of DNR's desired "Outcomes" is to "foster a natural resources stewardship ethic for all Marylanders". It is recommended that environmental education programs at Wye Island adopt the following guidelines:

- As with all management efforts at Wye, stewardship of the resource comes first. Environmental education activities should be subject to the same restrictions as other projects. For example, school groups are not taken into the restricted zone protecting an eagle's nest during the nesting season, etc. Total numbers of participants in various programs should be tracked and resources monitored for potential impacts.

- Environmental service learning projects continue to be emphasized, with project methods and outcomes carefully selected to ensure resource conservation, effective outcomes, and participant's increased understanding of the stewardship needs of the resource. Projects performed as part of a Service Learning experience are subject to the same project review requirements as any other management projects.

- Schoolhouse Woods: Interpretive materials emphasize old growth, patch dynamics, the importance of decomposition cycles, plant and animal diversity in undisturbed forests, history related to tree rings, etc. The number of guided groups through this fragile area should remain relatively small. Consider development of monitoring devices such as a register book, cable counter, or electric eye.

- Trails: Nature trails should be improved with updated signs. Continue to clearly identify multi use trails that support equestrian use with information on hunting season dates so that equestrian riders can choose to stay off the NRMA during hunting season. Additional nature trails should be designated and interpretive materials developed, to prevent overuse of Schoolhouse Woods and to expand the range of topics covered. Trails through Schoolhouse Woods and any other areas of natural vegetation should be surfaced with wood chips to avoid exotic plant introduction. No large or old trees should be removed for trail development. When trail condition is impaired, trails should be signed: "Bicycles and horses prohibited due to wet conditions."

· Partnerships should be sought with local birders to develop a birding checklist for the area.

· Interpretive materials should be developed or reviewed by resource experts to insure accuracy of message and conservation of sensitive resources.

· A seasonal naturalist position should be considered to develop and present educational programs and materials.

· Levels of public use of various types should be monitored using limits of acceptable change (LAC) protocols; and corresponding impacts to resources should be monitored and analyzed. The results of this analysis should be used to guide decisions regarding future policies for public use.

In addition to the five goals listed above comments received during the 30-day public comment period included a couple recommendations related to revenue generation at the NRMA. These are:

- Review current Ag. Leases to ensure that the prices are in keeping with the current market rates for similar land.
- Explore the possibility of establishing a user fee for everyone that enters the NRMA.

Further recommendations and plans for Wye Island NRMA can be found in Appendix III (the Annual Resource Management Objectives & Strategies Plan)

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APPENDIX I

SENSITIVE SPECIES GUIDELINES

Delmarva Fox Squirrels

The Delmarva fox squirrel, a state and federally listed endangered species, is known to occur on or in the immediate vicinity of the property. This area can be seen on Map 3. Protection of endangered species habitat is required within the Critical Area (COMAR 27.15.09.03). Delmarva fox squirrel habitat is generally characterized as forests with relatively mature trees, either hardwoods or loblolly pine, with a relatively sparse understory.

Presently, the forest habitat adjacent to Dividing Creek, and in tracts #1* and #3 is excellent for fox squirrels. There is an abundance of nesting cavities and mast producing trees. Especially important, the understory is sparse throughout most of these tracts. Any major timber harvest in these forests would increase the understory density and remove mast-producing trees. Timber Stand Improvement would remove cavity trees and beech. THEREFORE, I AM RECOMMENDING THAT NO TIMBER HARVEST OCCUR IN THESE AREAS.

Tract #2 is not as mature as #1 or #3. However, based on species composition, availability of cavities and mast production, this forest will soon develop into productive fox squirrel habitat. A short visit revealed an abundance of squirrel sign (species undetermined).

Elsewhere on the island, tree plantings for forest buffers should include at least 50% hardwood species with highest priority given to mast producing species such as white oak, cherrybark oak, and hickories.

Planting food plots (standing corn) adjacent to the major wooded tracts is also a good management practice. This can be worked into the farming contract or, planted by Maryland Fish Parks and Wildlife Service (MFPWS) personnel. These areas need only be 100 feet wide and can be as long as the woods edges.

Since loss of mature forest habitat is the primary threat to the Delmarva fox squirrel, the protection of appropriate habitat is necessary. However, if development in the forested areas or timber harvesting is being planned, the following should be considered:

1. As much contiguous forested acreage as possible should be retained.

2. If clearing is necessary, at least 25% of the suitable forested area should remain unaltered or a minimum of 10 acres, whichever is greater.

3. This unaltered Delmarva fox squirrel habitat should be retained as a contiguous forested tract, not as small disjunctive parcels.

4. Required forested buffers, such as buffers along streams or nontidal wetlands, should be expanded to at least 100 feet and preferably 300 feet in width.

5. Retention of mast producing trees such as oaks, hickories and beech is encouraged.

6. For selective harvesting or timber stand improvement (TSI), den trees and trees with leaf nests should be retained. Also, 1 or 2 large beech trees per acre should be retained.

SOURCES: Maryland Department of Natural Resources, Wildlife and Heritage Division; The Wildlife Management Plan for Wye Island NRMA QA Co. (Straw 1987); Critical Areas Workshop held on 10/8/96.

Forest Interior Breeding Birds

Forest interior breeding birds depend on large, contiguous tracts of forest during the breeding season. Due to intense fragmentation and loss of forestland in the Coastal Plain, this type of habitat has been featured for special protection in the Critical Area. Tract #1 provides ideal habitat for forest interior breeding birds due to its size and structural characteristics. In order to preserve this important habitat (and in keeping with the Delmarva fox squirrel recommendations), this tract should not be logged. Other protection measures that should be followed for this type of habitat on Wye Island are as follows:

1. Do not remove or disturb forest habitat during April-July, the breeding season for most Forest Interior Dwelling Species (FIDS). This seasonal restriction may be expanded to February-July if certain early nesting FIDS (eg., Barred Owl) are present.

2. Restrict development or other disturbance to nonforested areas or at least to the periphery of such areas (i.e., when planning roads, utility line corridors, or structures)

3. Wherever possible, minimize the number and length of driveways and roads, which should be made as narrow and short as possible. They would preferably be less than 25 feet long and 15 feet wide.

4. Limit forest removal to the "footprint" of houses and to that which is absolutely necessary for the placement of roads and driveways.

5. Maintain forest canopy closure over roads and driveways.

6. Maintain forest habitat up to the edges of roads and driveways; do not create or maintain mowed grassy berms.

7. Discourage the creation of small clearings and the disproportionate expansion of forest edge habitat.

8. Retain standing dead trees that serve as bird nesting and feeding habitat.

9. Maintain or create wildlife corridors (for details, see Critical Area Commission's Guidance Paper on Wildlife Corridors).

10. Afforestation efforts should target (1) riparian or streamside areas that lack woody vegetation, (2) forested riparian areas less than 300 feet, and (3) gaps or peninsulas of nonforested habitat within or adjacent to existing FIDS habitat.

*Tract designations from the forest management plan (Dickerson, 1984)

SOURCES: Maryland Department of Natural Resources, Wildlife and Heritage Division; and "A Guide to the Conservation of Forest Interior Dwelling Birds in the Critical Area." Guidance Paper No. 1. Chesapeake Bay Critical Area Commission.

Bald Eagles

These guidelines should be used for bald eagle nest site protection. Specific protection measures may be subject to change after sufficient departmental review depending on various factors such as the availability of improved management methods, site conditions, planned activities, nest history, etc.

A bald eagle nest occurs on the property. The bald eagle is listed as an endangered species by the state and as threatened by the federal government. Protection of endangered species habitat is required within the Critical Area (COMAR 27.15.09.03). The approximate location of the eagle nest on the property is indicated on Map 3. To protect this nest site the guidelines developed by the National Wildlife Federation should be implemented.

SOURCES: Cline, Keith. 1990. Bald Eagles in the Chesapeake – A Management Guide for Landowners. National Wildlife Federation, Institute for Wildlife Research, Washington, D.C. 16pp.; Maryland Department of Natural Resources, Wildlife and Heritage Division.

Appendix II
Additional Special Conditions
Addendum #1
Wye Island NRMA
Cropland Lease Agreement
Parcel #5

1. Following a prescribed nutrient management plan Tenant will not apply any phosphorous fertilizer (either chemical or organic) to agricultural fields until phosphorous levels meet State of Maryland Dept. of Agriculture guidelines and Wye Island NRMA Nutrient Management Plan. The only exception will be the application of starter fertilizer with phosphorous (which must be soil incorporated) when planting corn and application must be in the planter row. Broadcast or spray applications of starter fertilizer will **not** be allowed.

2. Farm parcels #1and #3 will be required to leave ten (10) acres of standing corn in twelve (12) row sections for Canada Goose Management as prescribed by the DNR Waterfowl Manager Larry Hindman and reviewed by Public Lands Wildlife Biologist/Manager John Moulis, Regional Park Manager Daryl DeCesare, and Wye Island NRMA Manager Dave Davis. Corn will generally be left standing through March 31 annually, in strips that are twelve (12) rows wide, with adjacent strips being separated by a distance of not less than thirty (30) feet. All strips will be located at least 200 feet from the nearest woods edge, and at least 100 feet from existing roadways. On parcel #1 this ten acres will be left in fields #1, 3, 4, 5, 7, 9, 10, and/or 11.

3. All (100%) corn ground will be broadcast or no-till planted to a winter grain crop, over corn stubble. **There will be no fall plowing of corn stubble permitted.** Winter grain crops can be treated as a production crop or used for nutrient management/green manure.

4. **There will be NO HAZING of Geese/ Waterfowl in any manner.** This includes flags, silhouettes, scarecrows, noise, and/or physically running bird/wildlife off any agricultural ground at Wye Island NRMA.

5. Tenant will be encouraged and permitted to remove/harvest at least two years crop growth of all agricultural plant material in their agricultural rotation to include the seed, stems, and leaves. This can be done by chopping crop for animal feed, bailing plant fodder for sale (straw), etc. This will be done to assist in reduction of phosphorous as part of nutrient management plan.

6. During the term of the lease the leasee will be required to plant one rotation of Round-up Ready Soybeans or Corn in each field to assist with noxious weed control.

7. Tenant, his agents, employees, will be responsible for minimizing damage to existing conservation areas (CRP, CREP, grass waterways, drive strips) from turning equipment, inadvertent tilling or over spray of herbicides. Any damage to these conservation areas will be billed to the tenant at a restoration cost of $200.00/ ac.

8. The Tenant will not be allowed to draw any water from wells on Wye Island NRMA. All water for irrigation and /or spraying purposes must be obtained from another source.

Witness:_____ _____
Department of Natural Resources

Witness:_____ _____
Tenant

APPENDIX III

Wye Island Natural Resources Management Area

Annual Resource Management Objectives & Strategies - FY 2003
(ARMOS)

Reviewed and submitted_____
Dave Davis, Manager Date

Reviewed by _____
Daryl DeCesare, E. Region Manager Date

Reviewed by _____
Bob Beckett, Public Lands Res. Manager Date

The ARMOS is a management tool for identifying and coordinating key issues that are important to Wye Island NRMA. For each issue, the plan describes one or more activities that are expected to be undertaken at the NRMA during the next fiscal year. The following outlines the activities planned for the fiscal year beginning July 1, 2002.

I. **RESOURCE MANAGEMENT**

A. WHITE-TAILED DEER

1. Maintain a healthy herd at a size that permits wooded areas to regenerate naturally, minimizes crop damage to agricultural leases, and that does not impose undue risks to the public in terms of vehicle accidents and disease transmission.

a) Twice a year, conduct dawn and dusk spotlighting counts. [Davis]

b) Proposal will be submitted to conduct one Forward Looking Infrared Radar (FLIR) deer count (if funding is available). [Moulis, Davis]

c) Continue managed deer hunting program via self-registration archery deer hunt and a special muzzleloader lottery hunt during the early muzzleloader season. Archery hunting for deer will be limited to Tuesday thru Saturday from the 1st Saturday in October to the Wednesday prior to Thanksgiving. The lottery muzzleloader hunt will be held for physically challenged persons, ladies only and a junior hunt during the early muzzleloader season. (10/17-19/02) A second muzzleloader lottery hunt will held during the 2nd week of the firearm season. Harvest numbers will be controlled by number of hunters and hunting days.

B. RARE, THREATENED AND ENDANGERED SPECIES

1. Incorporate protection of RT&E species habitat into land use planning and action.

a) Reevaluate existing and new information on site habitat conditions and significant natural features. [Moulis, Smith]

b) Present point data and protection recommendations to Park Manager and ID team. [Moulis, Smith]

c) Support site management through ID team and technical input into other management activities. [Smith]

d) Eagle nesting site(s) will be protected and buffered during the nesting season. Minimal disturbance to the eagle nesting will be maintained with a minimum 600 ft. buffer around the site.

e) Delmarva Fox Squirrel Habitat and research project. [Theres, Smith]

f) Evaluate Data from other independent research and study trials that have or are taking place on the facility (MDE, Patuxent Wildlife Research Center)

C.WATERFOWL MANAGEMENT

1. Maintain and improve waterfowl habitat for residential birds and migratory species through land use management. ie. Standing crops, winter cover crops, moist soil management, existing agricultural leases

a) Reevaluate existing and new information on site habitat conditions. [Jayne, Moulis, Hindman, Webster, Davis]

b) Monitor impact from exotic or nuisance species and take steps recommended by Wildlife division to manage impact. ie. Mute swans, Snow geese, muskrats, multi-flora rose, noxious weeds [Jayne, Moulis Hindman, Webster, USDA-FSA,
QA Soil Conservation, Davis]

c) Limited Migratory Canada Goose Hunting season – TBA after schedule for 2002-03 seasons is announced. Hunting will be limited to four pits per day, three days/week (tue, thur,& sat) and max.of four hunters/pit. Hunting hours will be ½ hour before sunrise until 1pm. No shoreline blinds, only field pits. May have two handicap accessible blinds available for 2002-03 season.

D. FORESTRY

1. Maintain a healthy forest to provide multiple benefits such as water retention, wildlife habitat, recreation, shore and erosion protection, and nutrient management. In developed areas, manage tree growth for public safety, tree health and aesthetic concerns.

a) Conduct an inventory and assessment to create a 2003 forest stewardship plan. This assessment will provide a basis for further study or recommendations. [Powers, Batchelor, Davis]

b) Support forest buffer planting activities according to plans previously developed via CRP, CREP and the DNR Riparian Buffer initiative. [Davis, Batchelor]

c) Inspect and remove hazardous trees in developed areas. [Davis, Batchelor]

d) Annual assessment and maintenance to the Wye Island Holly Tree to maintain this over 275 year old tree. Bi-annual deep root feeding, insect control, trimming as needed. [Davis, Batchelor, independent licensed tree expert]

E. MOWING PRACTICES AND NEST BOXES

1. Minimize mowing as a way to improve wildlife habitat and reduce budget costs, in keeping with the "Grow Don't Mow" effort. Reduce mowed areas by 10% as part of PPE objective. Increase wildlife numbers and diversity at the park.

a) Evaluate the "Grow Don't Mow" effort in the area and determine if additional acreage can be allowed to return to natural vegetation or be maintained as meadow habitat. Reduce mowed acreage if opportunities exist. [Davis]

b) Request Wildlife and Heritage to determine potential locations for nest boxes/nests for bats, bluebirds, wood ducks, ospreys, etc. where appropriate. [Jayne, Moulis, Davis]

1) Establish and/or continue monitoring project on 100 bluebird houses through our volunteer service learning program

c) Evaluate change in management practice on CRP, CREP, and riparian buffer areas to increase acres of native warm season grasses as habitat for ground nesting birds.

F. AGRICULTURAL PRACTICES

1. Maintain agricultural areas/acreage to sustain income under a best management plan.

a) Minimize soil run-off and loss. [FSA, NRCS, Beckett, Davis]

b) Reduce nutrient levels (both nitrate and phosphorus based) to meet State mandated reductions under the guidelines of a nutrient management plan. [FSA, NRCS, Beckett/Moon, Davis]

c) Maintain and establish, as needed, a 100 ft. buffer along all agricultural fields bordering wet areas to stabilize field and shoreline. Utilize established programs (CREP, stream releaf) to utilize buffers for multiple recognized

conservation practices, (reduction of soil loss, nutrient stabilization, habitat, recreation) [Beckett, Moon, Moulis, Davis]

d) Evaluate new request and contracts for use of bio-solids under the current farming leases and nutrient management plans [Beckett, Anderson, Moon, Davis]

G. SHORELINE STABILIZATION

1. Maintain existing shoreline stabilization projects and minimize the loss of additional shoreline areas through a comprehensive shoreline management plan

a) Evaluate existing shoreline projects for stability and function. Establish management plan for maintenance. Identify with DNR-SEC continuing shoreline restoration/stabilization efforts under the Wye Island NRMA Shoreline Stabilization Plan. [Casanova, Loran, Wilson, Williams, Davis]

b) Establish plan and evaluate critical shoreline areas in need of immediate attention. Prioritize areas that need structural stabilization and utilize capital funding where applicable to fund these projects. Continue systematic non-structural stabilization where applicable through the use of grants, (Chesapeake Bay Trust, American Forest) DNR in-house funding & technical assistance, and the use of service learning groups/volunteers to assist (AmeriCorps NCCC, MCC, School Groups, scouts) [Casanova, Loran, Wilson, Williams, Davis]

H. EVALUATION OF RESOURCE INFORMATION

1. Establish a basis for identifying long-range resource management objectives for areas of the NRMA that are not developed for public use.

a) Evaluate existing resource information, maps and materials. Three products will be generated:

i) a list of all immediately available resource information;

ii) annotations on each item's continuing value and/or appropriate application, and;

iii) realistic recommendations for additional resource information needs with objectives and responsibilities for obtaining that information. [Wilson, team]

b) Initiate a process to produce a set of long-range resource management objectives to guide future annual work plans. The primary product will be a set of objectives for the NRMA derived from DNR's Ecosystem-Based Management, Education and Guidance Program. [Wilson team]

c) Complete Land Use Management Plan for Wye Island NRMA (master plan) to give clear direction on all phases of use on public lands. [Wilson, Williams, Id team, Davis]

II. **RECREATION / NATURE TOURISM**

A. Fishing

1. Maintain and enhance fishing opportunities and related services for the fishing public.

a) Evaluate the possibility of providing additional shoreline access for fishing and crabbing with minimal impact to shoreline and eco-system. [Williams, Id team, Davis]

b) Determine interest in and potential use of a handicapped access area for fishing. [Davis, Wilson, Williams, Loran, Id team, Davis]

B. Boating

1. In balance with the area's resource management needs and other activities, determine feasibility for boating opportunities for human powered vessels (canoes, kayaks, rowing shells) only.

a) Conduct a site survey of the area to determine need and feasible location for a small pier or launching/recovery area for human powered vessels. Keeping in mind traditional waterfowl resting areas, SAV areas, shoreline stabilization, and other sensitive ecological resources. [Wilson, team, Davis]

b) In cooperation with Queen Anne and Talbot Counties, establish water trail around Wye Island with supporting map/brochure for public information. Trail will provide users with useful information to self-directed outdoor adventures with minimal impact to the resource. Trail brochure will provide users with information about natural & cultural resources, responsible outdoor use (LNT), points of interest and other nature tourism opportunities. Trail will emphasize water related natural resources and features with minimal impacts to eco-system at Wye Island NRMA. Currently identifying and conducting environmental review on soft landing sites with supporting infrastructure for trail users to access public land. [Wilson, Williams, ID team, Settina, Woodfield, Davis]

c) Evaluate recommendations in the Queen Anne County Nature Tourism plan and how these recommendations might be in concert or conflict with Wye Island Land Use Management Plan.

C . Swimming

1. Advise public of unprotected waterfront areas, which are attractive and may encourage visitors to swim.

a) Evaluate and update the Wye Island Waterfront Management Plan. [Davis, Simmons]

D. Conference Lodge/Pavilion

1. Provide a safe and clean facility for visitors to rent for special events, meetings, and retreats.

a) Monitor and evaluate visitor impact to insure proper use of the facility, activities and positive resource use. Utilize preventative maintenance practices (PM) to reduce down time and major maintenance repairs. [Davis, Wye Island staff]

b) Bring facility up to code on ADA specs for access.

E. Picnicking

1. Provide a safe and scenic location for visitors to enjoy the outdoor setting.

a) Conduct facility inspections and repairs to insure the visitor is provided the opportunity for a quality outdoor experience. [Davis]

F. Nature Appreciation

1. Assure public access to and appreciation of the natural resources found at Wye Island NRMA without damaging those resources.

a) Update self-guided nature trail and supporting brochure for visitor's access and information. [Davis]

b) Establish and maintain a trail system via the existing plan and the Trail Initiative program. [Davis, Wye Island staff]

c) Provide service learning opportunities for visitors, volunteers, and advocacy groups that will assist in maintaining and improving resource management objectives and strategies at Wye Island NRMA.

G. Camping – Youth and group camping.

1. Provide group campsites – primitive with pit toilets, fire ring, picnic tables. Potable water available at DNR Conference Lodge or Maintenance Shop. Three campsites and one overflow site for total of 25 campers/site. Useable for designated youth groups and other recognized groups (group must be non-profit w/ by-laws and membership list). Use by DNR Nature Tourism operators/partners is also allowed. All use is by reservation.

2. Provide service learning activities and projects for groups utilizing the campsites.

H. Hunting - Deer, Raccoon, Fox Chase

1. Provide recreational hunting opportunities within the guidelines of the wildlife management plan. [Jayne, Moulis, Davis]

a) Archery hunts on daily permit and muzzleloader hunts for deer via lottery applications. Emphasis is on management of deer herd. [Davis]

b) Goose hunts via lottery applications. This program will resume when statewide moratorium on goose hunting is lifted. [Jayne, Hindman, Moulis, Davis]

I. Field Trial/Dog Training

1. Provide recreational field trial opportunities for recognized organizations.

a) Field trial groups support management efforts for the area through the establishment, maintenance, and management of wildlife habitat.

b) Field trial use of the grounds at Wye Island is restricted to the fall season. (After ag crops are harvested and not beyond 12/31 of the calendar year.)

J. Equestrian Activities

1. Equestrian activities will be monitored as part of overall area management and as part of the new trail system initiative. Monitoring will track level and intensity of use, impacts on trails and other resources, parking availability, and any conflicts with other users.

2. Equestrian activity in relationship to field trial/dog training will be limited to guidelines in (I. Field Trail/ Dog Training section).

III. **SPECIAL EVENTS**

a. State Parks Week – plan at least 3-5 activities for public involvement during schedule period.

i. Focus on Rangers for one event (Open house at lodge/office)
ii. Initiate an advocacy group/friend of group (Wye Island conservation Corps – WICC) with a kick-off event/meet the staff/open house/what can I do to help Wye Island?
iii. Trail system dedication of new trails and area brochure.
iv. Utilize NT operator to lead a kayak tour in and around Wye Island in cooperation with QA and Talbot counties from one or all the public landings.
v. Ranger At Heart event for senior citizens from QA County Dept. of Aging at DNR Conference Lodge – Cruise with seniors or NT vendor charter boat.

b. Annual field trial schedule for Fall 2002 – may have at least three trials this fall, NGSPA, NGSPA Region 3, and American Pointing dog.

c. Fall 2002 – Archery deer hunts from Oct 5- 16 and Oct 22- Nov 27, 2002, Tuesday – Saturday only 25 hunters/day on daily permit first come. Special Muzzleloader Hunts for Physically Challenged, Women, and Youth Hunts on October 17-19, 2002. Second muzzleloader lottery hunts Dec 9-14, 2002 during 2nd week of deer firearm season.

d. In Jan-May & Oct-Dec 2002 host a volunteer workday on a SAT/SUN to work on trails and shoreline stabilization. Great recruiting for WICC. (See A-1)

e. Fall/winter 2002 – Migratory Canada Goose Hunt – Dates TBA Pending notification from USFWS & DNR Wildlife for 2002-03 seasons. 4 pits/day-3days/week – 4 hunter/pit max – from ½ hr before sunrise to 2 pm.

IV. **FACILITY MAINTENANCE**

a. Utilize Preventative Maintenance (PM) plans and procedures when and wherever possible to reduce cost, save wear and tear on existing equipment/facilities. Follow established departmental and agency SOP for scheduled and PM at Wye Island NRMA.

b. Finish conversion of the former Leonard property from an operational residence into the administrative/operational HQ for the area.

c. Seek alternative funding sources and corporate support to extend/enhance operational budget, so that more budgeted dollars can be directed to vital maintenance functions. (example of prior funding sources – AmeriCorps NCCC team, Chesapeake Bay Trust Grants, American Forest Grants)

d. Continue to nominate for enrollment lands that qualify for participation in resource conservation programs, (CREP, wetlands delineation, riparian buffer/Stream ReLeaf.

e. Follow-up on PIP projects for Wye Island for FY- 03

f. Submit two projects for seasonal tech program, (1) Wooden deck (20 x 30) as attachment to pavilion, that will allow users to erect a frame tent 20 x 30 or utilize as dance floor, etc. (2) Replace all windows and install sliding glass door on water side of cabin for access onto a wooden deck.

g. Begin process to bring lodge and supporting facilities at Wye Island NRMA into ADA compliance through special funding, seasonal tech projects, or critical maintenance.